

'82. A great year for PTZ.
PTZ: THE ADVANCED FEATURE TERMINAL FOR ICANIMISM
FERRANTI Computer Systems

Computer Weekly

Thursday, September 16, 1982

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Computer Weekly

Thursday, September 23, 1982 Number 827 35p

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FERRANTI Computer Systems

Think tank to organise French DP

by Jack Gee
FRENCH officials and business leaders have set up a think tank to organise the future of the national data processing industry in the framework of the FF140 billion (£11 billion) five-year electronics and computer plan.
Government experts propose to establish close links between CII-Honeywell Bull, Thomson-CSF's subsidiary SEMS and peripheral maker Logabax. But they admit they have not yet found a way to harmonise the activities of this powerful triumvirate with smaller but active private firms such as Intertechnique and SFENA-DSI.
However, co-ordination is particularly urgent in order to meet US competition at a time when CII-HB has just reported losses of FF500 million (£40 million) and Digital Equipment has increased its turnover by 57%.
Government and industry have not yet taken a decision on a project to produce an all-French large mainframe, pending talks with other European manufacturers.

Jean-Pierre Chevènement, Minister for Industry and Technology, favours an alliance with France's industrialised neighbours for this purpose.
Chevènement's ministry has published proposals to consolidate CII-HB's position in the European market in medium-sized management systems based on its DSA network architecture.
The Industry and Technology Ministry is urging that duplication in expenditure on research and development and in industrial and marketing investment must be avoided.
The government is making FF600 million (£48 million) available to develop basic computer components - Chevènement calls them "building blocks" - for use by a wide range of manufacturers.
Chevènement's office says that the emphasis must be placed on mass-production of microcomputers without sacrificing individual initiative in innovation.

'Dismissal was fair'

by Robert Parry
SACKED shift leader Ralph Ackad has lost his unfair dismissal claim against former employer Glaxo Operations UK. He was fired last March for allegedly exceeding his authority as a shift leader when he used a command to disable a terminal after six invalid password warnings appeared one after the other.
He took Glaxo to an industrial tribunal in July, but after the two days set aside for the hearing, Glaxo's counsel was only halfway through the evidence of its second witness, so the hearing was adjourned until early this month.
Now, after a further three days, the tribunal has ruled that Ackad was fairly dismissed.
Ackad called an expert witness, Glaxo project manager Peter By-

ers, to give evidence. He said that Ackad's use of the command had not caused any damage to the system, but added that he would not have expected it to be used in the computer room. Site procedures, written by Ackad, restricted use of the command to authorised personnel.
Glaxo challenged the expertise of the witness in this matter, saying he did not actually use the command, and questioned the way Ackad approached the case. It was felt he should have gone through internal grievance procedures first.
Ackad, who worked with the HP 3000 machines at Glaxo's Greenford site for five years, feels he lost the case because he did not fit in. "I did the job well," he says, "but didn't fit the frame they wanted me to at Glaxo. I wasn't a yes man."

LINE NOISE A winter of discontent

THE decision by the DVLC to switch to optical character reading equipment for input is likely to make this coming winter of union discontent even more bitter. Many of the staff at the centre are employed in the huge key-to-disc Keycheck system. They are likely to find that not so many of them are needed if the two shortlisted companies deliver the multi-font hand reading machines which will be needed.

MICROCOMPUTER system software star Digital Research is fighting back in the micro operating system battle. A go-faster version of its de facto eight-bit standard operating system CP/M is about to hit the streets, and it is making a strong play in the IBM Personal Computer stakes with an implementation of Concurrent CP/M-86. The new CP/M version, CP/M-3, will be released "very soon", and is already with selected customers in pre-release.

FUJITSU has developed a hybrid laser printer from an IBM 3800 laser printer and the Siemens product marketed by ICL as the LPS14. It is about to burst on to the UK market, and considering the Japanese firm's close associations with our own ICL, it may end up carrying an ICL label. But the persons who should be in the know concerning such matters at ICL expressed surprise at such an idea: "The Siemens marketing agreement has only just been renewed," said one expert.

STORAGE TECHNOLOGY, which earlier this year sued ICL Systems for misappropriation of trade secrets, is now reportedly going to buy this firm technology from the same company.



COGGAN... Confirmed he had received a writ.

Former investors in Gamma go to court

by Kevin Cahill
THE ghost of failed Nottingham-based system builder Gamma Computer Group has risen again as several former investors go to court alleging negligent misrepresentation in documents used to obtain loans and equity. Gamma failed in February 1980.
Not long before the company went into liquidation, there was a private financing totalling £400,000 for Gamma by a number of city institutions including Sun Life Assurance.
The financing was not carried out in the conventional manner - through a stockbroker and accompanied by a prospectus.
Instead, Gamma directors produced a set of documents which showed the company strapped for cash but with good prospects. The documents and accompanying letters were handled by MJH Nightingale, a dealer in stocks and shares. But the Nightingale executives say that they did not certify the documents.
Within weeks of the financing Gamma went down. A receiver from accountants Ernst & Whinney moved in and the assets of the company were disposed of.
In the intervening eighteen months, extensive negotiations have taken place in an attempt to resolve liability and to get some of the original money back.
The fact that the investors have gone to court implies that those negotiations have now broken down.
The writ, which was issued on August 17, seeks to recover the monies invested by Sun Life and others on the grounds that four directors, including managing director George Coggan, acted negligently in the information they gave to the investors. Coggan confirmed that he had received the writ.

Third party software for DEC Professional

by Robert Parry
KNIGHTSBRIDGE software specialist Filetab Support Services has become the first in the UK to get third party software running on DEC's Professional series of personal computers. The Filetab software was shown at the recent Decus, DEC user group conference and at last week's Personal Computer World show, tempting users to the as yet unavailable personal machines.
It is a double first for Filetab, as up till now its RPL and RQL software has been restricted to DEC PDP-11 and VAX-11 minis. The move to the Professional series marks its first move to microcomputers.
Filetab managing director Ritchie McGladdery was surprised at the ease of transferring the soft-

ware between the DEC minis and micro. "The programming language compiler and the query language compiler are fairly substantial bits of software," he says, "but we completed the transfer in only two days."
He reckons this promises well for the machines, which should be generally available towards the end of the year, according to DEC.
Like many others - as was noticeable from the myriad of companies with that other elusive mainframe's micro, the IBM Personal Computer, on their stands at the PCW show - McGladdery is tempted to get the Filetab software on to the IBM machine. But there is a question of priorities, and the DEC range of machines comes first, he says.

Hamilton Rentals sacks 25

by John Kavanagh
A FIFTH of the staff at one of the UK's leading computer equipment rental firms have lost their jobs. Hamilton Rentals has shed 25 of its 130 staff because an expected upturn in the national economy failed to happen.
But the company insists that it is still healthy and expanding its product range, with offerings for the electronic office coming soon.
"About 18 months ago we geared up for business growth, but now it's a case of cutting operating costs in line with the state of the economy," said commercial manager Harry Scott. "And we can see no signs of an upturn now for at least six or nine months."
"However, we are still selling and renting more units than last year. But our income is about the same because our rental rates have fallen with national interest rates. Turnover is about £3 million and we have a healthy profit."
Scott said about six jobs had gone through "natural" wastage. Some had been lost because two Scottish offices had been merged into a new Aberdeen office, reducing the need for administrative staff.

European satellites splash down

EUROPEAN space hopes splashed into the Atlantic last week with the Ariane rocket, primarily developed by the French space agency, CNES.
Ariane was carrying two main time communications satellites, the British Marcs B and Julie Sirio-2, which were to be placed in orbit 2,300 miles above the earth, but both were destroyed when the \$1 billion rocket crashed.

Life after micros

THE British Computer Society has organised a lecture on the subject of life after the microcomputer as part of its Silver Jubilee celebrations next year. The lecture will be given in London on March 10 by Louis Robinson, director of University Relations for IBM and will be sponsored by Computer Weekly.

Booming Future

BOOMING Scottish computer Future Technology System (FTS) has taken the first major step towards fulfilling its goal of becoming the DEC of the electronic office with a £3 million order for its 16-bit microcomputer system. The order comes from UK distributor OEM.

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Two Midas sales top \$1m

QUEEN'S Award winning BIS Software has sealed contracts worth over \$1 million for its Midas banking and communications systems. One, with Banque Française du Commerce Extérieur, is its largest single site contract ever, at \$591,000. The other is with Bank of New South Wales for Midas installations in New York, Chicago and San Francisco offices.

MSA/Univac deal

THE big IBM applications software firm MSA has jumped into the Sperry Univac market with an agreement under which the two companies will develop and sell MSA's financial and payroll packages on Univac 1100 mainframes worldwide.

Plessey trade

PLESSEY has signed a £50-million, five-year trading deal with Telephone Rentals. The deal allows Telephone Rentals to sell new Plessey equipment such as the 1bis business communications system. It will also get the PDX private telephone exchange, said to have 40% of the UK market.

IBM signs up TI

IBM has signed up Texas Instruments to develop chips to handle the linking of computer equipment to a local area network. IBM has gone for a bus-based one local net scheme, using a token passing ring approach. The work with TI will be in line with this, IBM says.

Dealer for 16-bit

BRISTOL software house TDI has been appointed UK distributor for a 68000-based machine, the Sage II from US company Sage Computer Technology. Sage claims the machine runs at four times the speed of popular 16-biters from IBM and Sirius, and 14 times that of the 8-bit Apple II.

600-job creation

MOTOROLA is creating 600 jobs in the UK by building a £10 million mobile radio communications plant in Basingstoke, Hampshire. The factory will also take in the 400 people at an existing plant, which will be closed.

Altos UK foothold

US microcomputer manufacturer Altos Computer Systems has set up a UK subsidiary in Ascot, Berkshire. The company is aiming at UK sales of over £4 million this year, compared with around £1.75 million in 1981. UK sales are handled by two main distributors, Microtex of Biron and Logitek in Manchester. Altos has four UK staff.



WILMOT... Government spending millions on awareness, but what we need are computer graduates.

Wilmot slates IT policies of govt

A stronger ICL is poised to raise £100m on rights issue

by Kevin Cahill
IN an uncharacteristic outburst Robb Wilmot, the managing director of ICL, has slated the government over its policy on information technology.
Speaking to a meeting of the British Computer Society last week, he said that the drop in enrolment on computer science courses was a disgrace.
"The government is spending millions on awareness, but what we need are more qualified graduates in computer science, particularly in commercial data processing. Less than 10% of those who qualify in computer science do so in commercial data processing."

At the same meeting Wilmot claimed that the company will meet its forecasts and its targets for the current year. That has brought speculation that ICL is soon to launch a rights issue estimated at £100 million.
Opinion in the City is that ICL has made such a good recovery that a rights issue of this size would be a sign of strength rather than weakness. One closely placed analyst said that if ICL went for less he would be surprised and disappointed: "It's just what the company needs to get it on the road and into the world league of computer companies, alongside DEC and IBM."

But whatever the government's problems, which Wilmot said only involved 7% of the company's sales nowadays, ICL was going forward with a vengeance.
This will be more than welcome news to many City investors and analysts, who have never been able to really understand what went wrong with ICL under one of their own men, Philip Chappell, or why the Wilmot formula is making the company go right.
If a £100 million rights issue does go ahead, ICL would be asking its current shareholders to cough up, as of right, about £1 for every 25p share they hold.
The current market price of the ICL share is 60p to 65p, which means that ICL shareholders will have to pay 35p over the odds for their new shares, as compared with the 15p over the odds that the market offered for the last 25p rights issue.

The consensus of opinion is that ICL has made such a good recovery that a demand of this size, far from a mark of weakness, is a sign of strength.
Another piece of news which is bound to bring joy to the hearts of ICL's long-suffering shareholders is the fact that the company is expecting another major order in New York. Wilmot said that he expects one more prime order in the United States "soon".

After making this comment he went on to cite the success of a number of UK police forces in recent murder hunts using CAFS. This seems to imply that he expects the next order to be for a CAFS system attached to the 2900 computer range from a New York police department.

'DP users cable TV's mainstay'

by Donald Kennett
MOST OF the profits made by cable television operators will come from data processing and not from entertainment uses, according to the Institute of Information Scientists.
The Institute gave this view in its evidence to the Hunt Committee on cable television, which is reporting to the government this month about issues such as how to allocate licences, to what extent monopolies should be allowed and what technical standards are necessary.
Information technology minister Kenneth Baker has said repeatedly that he believes the greatest long-term opportunities from the cable network will be for interactive computer-based services.

The Institute goes further by suggesting that these services will predominate from the start.
It cites Prestel as a case where the business market has proved more significant than the domestic, despite original expectations, and claims that its view is corroborated by reports from the BBC and the Centre for Policy Studies.
The Institute's evidence to Hunt has four other conclusions: privacy legislation should be enacted to prevent the abuse of information about subscribers' purchasing decisions, financial transactions or viewing habits; the government should unify the responsibilities for information, technology and services that currently fall under the Department of Industry, the Home Office, and other departments; optical fibre cables should be used throughout the network to give the maximum opportunity for future growth; and the urgency of the project is not as great as the government believes.

Addressing a Press conference this week on the eve of Stob, France's premier industry show, Stern said "IBM want to bind customers to themselves. We are offering an alternative in campaigning for network standards which will give our customers as wide a choice of equipment as possible."
Stern said that ICL had told him its management strongly supported this viewpoint during recent talks.
The CII-Honeywell Bull chairman said: "We are moving out of a product market into one design for the end users who want complete systems in an increasingly distributed environment."



STERN... rejects IBM.

CII-HB says no to IBM

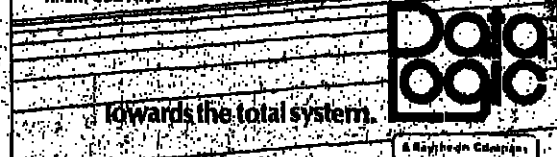
by Jack Gee
JACQUES STERN, chairman of CII-Honeywell Bull, said in Paris that his company, which came under State control in the spring, has firmly rejected compatibility with IBM and is fighting for a heterogeneous system of standards.
Addressing a Press conference this week on the eve of Stob, France's premier industry show, Stern said "IBM want to bind customers to themselves. We are offering an alternative in campaigning for network standards which will give our customers as wide a choice of equipment as possible."
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Services bigger than govt thought

by Boris Sedacca
THE UK computer services industry is doing much better than the government thinks.

For according to the latest survey by the Computing Services Association, its members alone are turning over £750 million a year, well above the latest government figures.

The total revenue for the 99 companies which responded to the survey was over £450 million. The CSA then calculated that revenues for all 184 members would be in excess of £750 million - "well above the figures normally quoted for the services sector," it added, referring to government statistics published in the SDQ9 report which put industry revenues at a more conservative figure of £612 million.

"I don't want to knock SDQ9

but their figures are based on a smaller number of companies, somewhere between 135 and 140, and they have included companies which we would not include, hardware manufacturers for example," added John Marshall, consultant to the CSA responsible for the survey.

Marketing was cited as an important factor affecting respondents' business opportunities and performance.

The bureau market is still the largest revenue earning activity within the industry, or £153 out of £450 million total.

The figures also show a decline in the straight computer processing operations, according to Doug Eysions, director-general of the CSA. "Bureaux are less buoyant than the industry as a whole," he said.

John Marshall said that bureaux are striking out into other areas in order to survive. The bureau sector of the CSA was the only one which viewed the future pessimistically.

In response to the question: "How do you view the business outlook for your company in the current year compared to last year?" only 37% said better, while 30% said worse and 33% saw no change.

"The 37% who said things were better are optimistic because they are the ones who are diversifying," Marshall explained. "Bureaux are not going to disappear, though."

But staff recruitment in the industry was at a standstill. The level of staff growth within the companies which returned completed questionnaires from a total membership of 184, was 1.5%.



EYBIONS... "Bureaux are less buoyant than the industry as a whole."

"The small companies recorded an 11% staff growth rate for 1981 although the number of people involved is likely to be insignificant in terms of overall industry staff development," says the survey.

"Based on the result of the survey, the revenue per head for all of the CSA membership is £26,700. This compares favourably with the figure given in the government's SDQ9 report for the fourth quarter in 1981 of £23,750."

Geisco to buy \$10m of PCs

by Howard Karten

ONE of the largest service bureaus in the world has become the biggest customer for IBM's Personal Computer, but users of the machine outside the US will have to wait until IBM makes the PC available worldwide.

Geisco, General Electric Information Services Company, has ordered \$10 million worth of PCs which retail at up to \$6,500 a unit. However, a UK spokesman for Geisco said the deal was not for the US at the moment, and the company had no plans to start importing PCs in advance of IBM's official worldwide launch.

The spokesman said that Geisco expects to start offering in the service late this year or early next year.

In the US the machine will be used as an interface device to Geisco's worldwide telecommunications network, with the added advantage of 16-bit micro power at a local site. Geisco will provide hardware support in the US. The UK spokesman said this might change when Geisco brings the machine to this country.

The company will not supply PCs for standalone use, but only an interface device for telecommunications network. The Geisco network is probably the biggest of its kind in the world; it has access from 750 cities, and there are three computer centres, one in Holland and two in the US, handling 44 mainframes.

Trade Centre

A NEUTRAL meeting ground for the computer industry has been set up in Eindhoven in the Netherlands in the form of a World Trade Centre. It is getting a £180,000 year subsidy from Eindhoven's authorities.

Tektronix ups software output

by Frank Brown

MANUFACTURERS of dedicated 16-bit micro systems must automate the development of software for their products, or face prohibitive costs which they will be unlikely to recoup from product sales, according to Tektronix microsystems expert Rick Potter.

"Development software for a \$10 chip can cost \$200,000 using conventional non-structured techniques, and Texas Instruments estimates that by 1985 the typical microprocessor application will cost its developer upwards of \$3 million if produced in the same way as today," he said.

Potter was speaking at the UK launch of Lands (Language Development System), Tektronix's new package of software designed to cut the cost, improve the efficiency and speed the throughput of 16-bit applications software development.

The problem of software development costs would get worse,

Potter contended, because the supermicros of the Eighties required considerably more program code to make full use of the extra processing facilities they would provide. A 16-bit device, for example, requires the amount of code that is needed for eight-bit devices.

This, coupled with the shortage of proficient programmers, the present error-prone methods of developing programs, and the extremely high cost of correcting errors in the final stages of system development, could adversely affect the adoption rate of supermicros.

The solution was not more programmers on each project, Potter said, but better software development tools which automate all stages of program development, including initial design and hardware/software integration as well as code generation, and improve overall project management.

The specialised tools the package provides are combined with structured programming, to make software development an engineering discipline rather than an art.

Lands allows programmers to work in a high-level language, Pascal, throughout the whole software development cycle, from entering of source code to debugging the prototype.

Lands comprises a language-directed editor (LDE) which provides full Pascal syntax checking during source-code entry, a Pascal compiler which provides I/O simulation for any operating system, an integration control system for configuring software to fit system hardware, and a Pascal debug that enables debugging using Pascal-oriented statements to eliminate the need to translate assembler listings back into source code for debugging at hex level.



POTTER... development software for a \$10 chip can cost \$200,000.

MSC adds to training grant cash

by John Kavanagh

THE Manpower Services Commission has revamped its scheme of computer training grants to employers to make more money available. It is also preparing to overhaul its much-criticised TOPS training scheme.

These moves follow a restructuring of the MSC, which has put all computer training under one man, Hugh Sharp.

"In the past only 500 of our 2,000 annual grants to employers have been taken up," said Sharp. "The scheme is now better presented and more flexible. Previously we specified a rigid number of weeks for the training; now it's at the employer's discretion."

"We're also encouraging employers to come to us with ideas on training in new skills."

The grants have been increased from a scale of between £60 and £80 to a flat £100 a week. The MSC is allocating £2 million to the scheme, which is aimed at existing computer staff or people in other areas with computing potential.

IBM's voice message add-on reaches Europe

by Donald Kennett

THE recorded voice message system the IBM launched last year in the US is now being marketed in Europe as an add-on for its 3750 and 1750 computer-controlled private telephone exchanges.

Once again, the involvement of the giant in an area that many are sceptical about is likely to make people look at it more closely, while the price range of £92,000 to £200,000 should give competitors plenty of room to manoeuvre.

The system, called the Audio Distribution System and based on

the IBM Series I mini, is sold in the US for use with other companies' PABXs because IBM does not sell its own PABXs there.

But in Europe it will only be sold for attachment to an IBM 3750 or 1750. Because there is so little multifrequency signalling (as used in pushbutton dialling) in European public telephone networks, the system will also be limited to communications between telephones attached to a single exchange or network of exchanges. The system has over 40 commands for sending, editing and accessing.

Big French plans for office market

by Jack Gee

FRENCH manufacturers have announced ambitious plans in office automation equipment, with an alliance between Jeumont-Schneider and an American partner, and a claim by CIT-Alcatel that it is France's best hope for developing this industry.

Christian Devin, chairman of Jeumont-Schneider, said the French government has approved the purchase of a stake in Microfiv, the Californian firm which specialises in microcomputer design and manufacture.

Jeumont-Schneider, which has conquered the leading position in private telephone switching systems in France, plans to build

up integrated office systems around its PABX activities.

Devin said that his company will start off with an investment of FF100 million (£8 million) over the next three years and boost turnover from zero to FF one billion (£80 million).

Jeumont will exercise control over a new research and design firm to be set up with Microfiv in the US to create new equipment and software.

Jeumont-Schneider hopes that the French government will provide cash help for its new venture in the framework of the five-year plan for the electronics industry which will require total investment of FF140 million (£11 million).

Initially, Jeumont-Schneider will take an 18 per cent stake in Microfiv, with an option to raise this to 51 per cent control in a partnership with SG2, France's fourth ranking software services firm.

Echoing Jeumont-Schneider's optimism, Alcatel-Chavanon, chairman of Alcatel-Electronique, a CIT-Alcatel subsidiary, predicted sales of FF2.2 billion (£180 million) compared with FF180 million (£14 million) in 1979.

Chavanon said: "Our strategic choices were well made at the start. Thanks to its trump cards, Alcatel is France's only hope in office automation equipment."

Cheap academic Unix

by Robert Parry

UNIVERSITY Unix users can rest easy. Despite fears that AT&T was about to hike the price of a Unix source licence to academic bodies from \$350 to over \$3,000, the cost of a licence to degree granting institutions has now been set at \$400.

And, thanks to London-based Root Computers, enhancements making it friendly and easily usable are to be available for an extra £150 only.

At the recent European Unix User Group conference in Leeds, Otis Wilson, AT&T's technical licensing manager, announced that the Unix System III academic licence would be \$400, with an all-site upgrade from other Unix versions costing \$800.

This compares with a commercial licence fee of \$43,000 plus \$25,000 for the right to issue sub-licenses.

Wilson also said that future releases of Unix will be compatible with System III, the first deliberately commercial release of the operating system born in Bell Labs.

According to Robin Schlee, marketing manager of Root Computers, this will lead universities to move over to System III from the earlier Unix Version 7, and he suspects the commercial market will follow.

Root is a DEC OEM, its main business being the supply of System II to commercial end users. It has implemented the operating system on the full range of DEC equipment, including enhancements like a full screen editor, spooler, and a user overlay allowing big programs to run on PDP-11s with limited address space.

"It took some effort to convert System III to run on DEC kit," says Schlee. "About two man-years in all." As a marketing policy, Root is following AT&T's lead and will supply the source code for its add-ons at £150 to any university that has a System III source code licence from AT&T.

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WILSON... "Future releases will be compatible with System III."

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CDC gives disc choice

by Philip Hunter

IBM USERS with medium and large-sized IBM mainframes have been offered a choice of disc drive with two new UK releases from Control Data.

One is a disc system called 33750, which is compatible with the IBM 3375 disc system. This is aimed at the larger IBM 4300 machines and the bottom end of the more powerful 3033 range.

The other new product from CDC is the 33800, which is plug-compatible with the IBM 3380 disc system. This is aimed at the market for the larger 3081 mainframes, and the top end of the

3033 range.

Both the new disc systems come with storage control devices to allow CDC discs to be attached directly to the IBM computers. The smaller 33750 can be upgraded to the 33800. CDC claims that its new disc systems offer bigger storage capacity and faster access than their IBM equivalents.

CDC is said to be following IBM in the optical disc area, which many observers expect to become a prevalent medium for mass storage by the mid-1980s. "We are watching and waiting for IBM," said Bill Martin, CDC's systems architecture manager.

Accountants deny cover-up

by Howard Karten

THE American Institute of Certified Public Accountants, a professional society of accountants, is holding back a report on computer-related fraud in the banking and insurance industries, it is claimed.

According to a story in MIS Week, published in New York, AICPA officials have not released a report by a task force of the EDP Auditing Standards Subcommittee for fear it could lead to professional embarrassment.

D. R. Carmichael, vice-president, auditing, AICPA, said: "There is not a shred of truth to

the comments of the unnamed source." According to MIS Week, its source was a member of the EDP Fraud Review task force.

Carmichael said that the report had been due to be filed by October 1981, but that the group's "literary effort" was deficient, and that the report required additional analysis.

According to MIS Week, one of the points made by the study which irked AICPA officials and members of committees that reviewed it, was that most computer-related fraud has been turned up by accident or by customer complaints, rather than by auditors.

ANGLO-DUTCH SOFTWARE COLLABORATION

Holland Data Group, a data processing group of companies including a software house and a computer service organisation, seeks to establish immediate contact with a small to medium sized SOFTWARE AND/OR HARDWARE (DEC or PRIME OEM) COMPANY.

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Sinclair tops govt's offer

by Robert Parry
SINCLAIR last week topped the government's £9 million scheme to put micros in all 27,000 UK primary schools with a £15 million bonus offer of the company's own.

The company is to give a ZX printer, a copy of the Logo educational computing language, and 10 discount vouchers for future purchases with each of its Spectrum micros bought with the Department of Industry's 50% subsidy for schools' purchases of their first micro.

"It is our way of making the point as dramatically as we can," says Clive Sinclair, boss of Sinclair Research. "One computer per school is a great help, but it is only a start. The ideal is one per child."

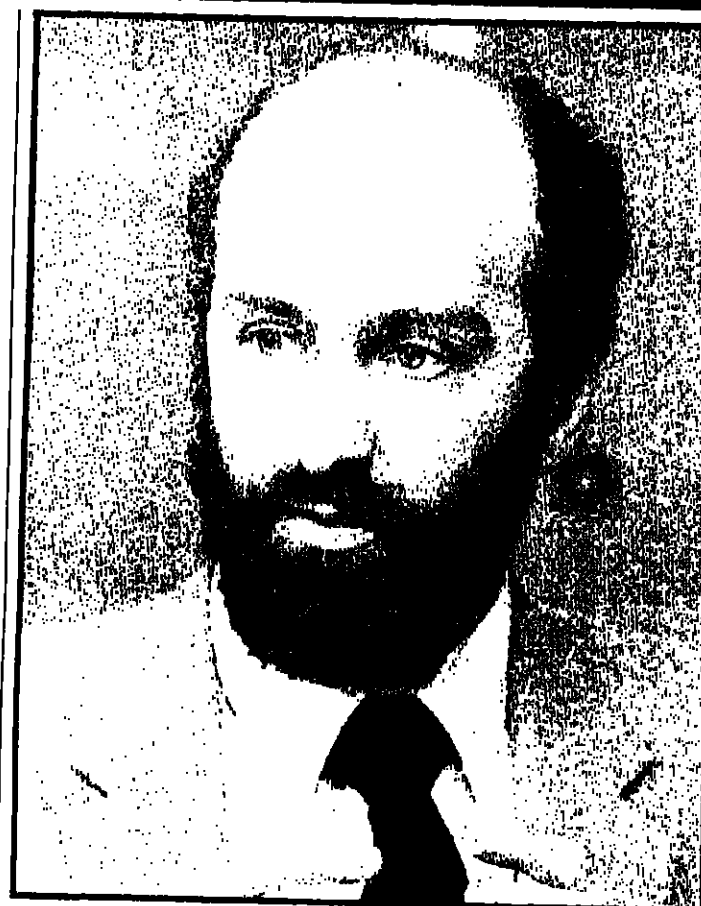
The vouchers may be used to get a £45 discount on the normal price of £175 for a 48K Spectrum, or to get a free printer worth £60 with a full-price Spectrum.

The Spectrum Logo language, which will come free in the package offered by Sinclair for the Department of Industry scheme, joins two other micro versions available for the Apple II and Texas Instruments' TI 99/4A.

The combination of computer and Logo gives a model of the natural environment of the real world, says Nigel Searle, head of Sinclair's computer division, and means children do not have to adapt their way of thinking to fit in with the computer.

The Logo package, which will sell for below £25, says Searle, will be joined by a Spectrum version of Prolog and further packages in Sinclair's range of educational software.

The Dol Micros in Primary schools starts next month and runs until the end of 1984. Money from schools to buy packages based on the Sinclair ZX Spectrum, Acorn's BBC Model B and Research Machines' 480Z will be matched pound for pound. Sinclair hopes his scheme will induce schools to plump for the Spectrum. "Our objective is always monopoly," he adds.



KENDRICK... Setting up a network of 50 dealers.

Positron back in business

by John Kavanagh
THE government-backed microcomputer manufacturer Positron Computers has recovered from a false start in the business systems market and is now appointing UK dealers and offering programming tools and applications software.

And one of its systems, with a keyboard adapted for the French market, is being evaluated by a French dealer, while negotiations are on with US distributors.

Positron has parted company with Shaw Business Centres, appointed earlier this year to distribute the company's 9000 micro nationally. Positron said Shaw did not provide the customer back-up which had been expected.

This second time round it has appointed Ian Kendrick as dealer sales manager. Kendrick is now setting up a network of 50 dealers.

Positron is also supplying the Modusoft range of software development aids from young company Measurement Systems.

SALES BRIEF

Citibank upgrades to fight crime

CITIBANK, the bank with the biggest assets and profits in the world, has installed 100 M. Aligo Datacryptor II encryption devices on its Middle Eastern, African and Asian data links. The upgrade upgrades Citibank's previous word-based security system. It was installed because the bank observed a worrying growth in computer crime. It passes over a billion a day around its international data network.

Order of Society

MANFIELD Building Society, the latest of 12 building societies to order Philips PTS 6000 micro-top terminals from Cambridge, NatWest Bank subsidiary, Cambridge's software and its bureau-based counter-top terminal service now due to be installed in its building society branches or year, earning the bureau £1.2m.

Floppy business

EX-CELL-O Corp, the US maker of Remex floppy drives, has signed up Techni International of Windsor, European distributor for its products. Techni is a subsidiary of the US-based engineering company Dyner.

Gaining access

MAP Computer Systems built Oldham has won orders from Bant and BICC for its CO2 emulator software which enables microcomputers to access ICL mainframes. It has also been asked to adapt the software for Quinox range of microprocessors which can be offered as an option.

Tree system

THE FORESTRY Commission has placed an order with Golding-based G. F. Marshall Computer Services for map digitising, plotting equipment and software. The system is based on microcomputers, and will help the Commission to produce Ordnance Survey standard maps of its forests from aerial photographs.

Mercury links

THE UK subsidiary of Digital Communications Corp has received a further two orders for Cable & Wireless on behalf of Mercury Communications to equip its alternative telephone network. The orders are for £1.2m worth of TDMA (time division multiple access) digital radio links and for £237,000 worth of delta modulation codes to digitise speech traffic.

BT workstations

BRITISH TELECOM has ordered 13 OTL IMP Information Management Processor workstations costing over £100,000 for its Martlesham research laboratory from Winchester-based Office Technology. The workstations, which have black-on-white displays, will be used in the system pool and in human factors research. Launched last October, the IMP is claimed to be the first office automation system to integrate voice, text, data and graphics. It was recently the subject of an agreement under which it is to be marketed in Europe.

Dive safely

A COMPUTER project aimed at reducing the number of diving accidents has been set up by Reliability Consultants (RCL) on behalf of the Department of Energy. RCL will establish a database of diving accidents from which computer programs will use statistical methods to determine the most dangerous types of equipment and equipment.

COMPUTERS & VIDEO CONVERGENCE

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25-29 October 1982, Crest Hotel, Heathrow, England

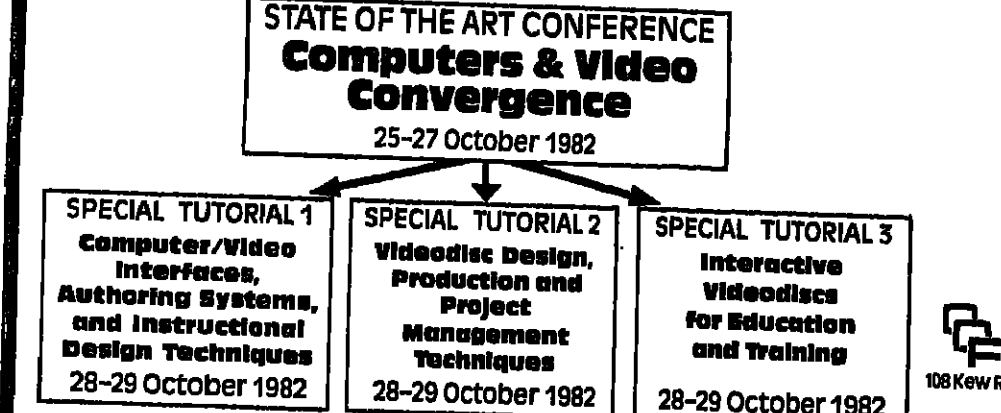
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Another suit for Burroughs

by John Kavanagh
ANOTHER frustrated Burroughs user is preparing to sue the company over the performance of its B700 business computer. ARI Propafloor, a UK manufacturer of raised floors, is one of 150-odd firms, almost all in the UK, believed to have lawsuits outstanding against Burroughs. Most involve the B80 and B800 small computers.

Propafloor managing director Andrew Harvey said his company could be claiming over £125,000 against the cost of equipment, software and lost time.

He said Propafloor had had problems with both the B700 and the Conacs package for the contracting industry.

"First Burroughs said the problem was operator error, then they said we should upgrade the software to a later version and finally they suggested moving to a B800," he said.

"We gave them a deadline for getting things right and they failed to meet it so we bought an IBM System 34. That system was in and working with a package in just over a month, which proves there was no operator error."

Burroughs would not comment on the complaint because it had not received full details.

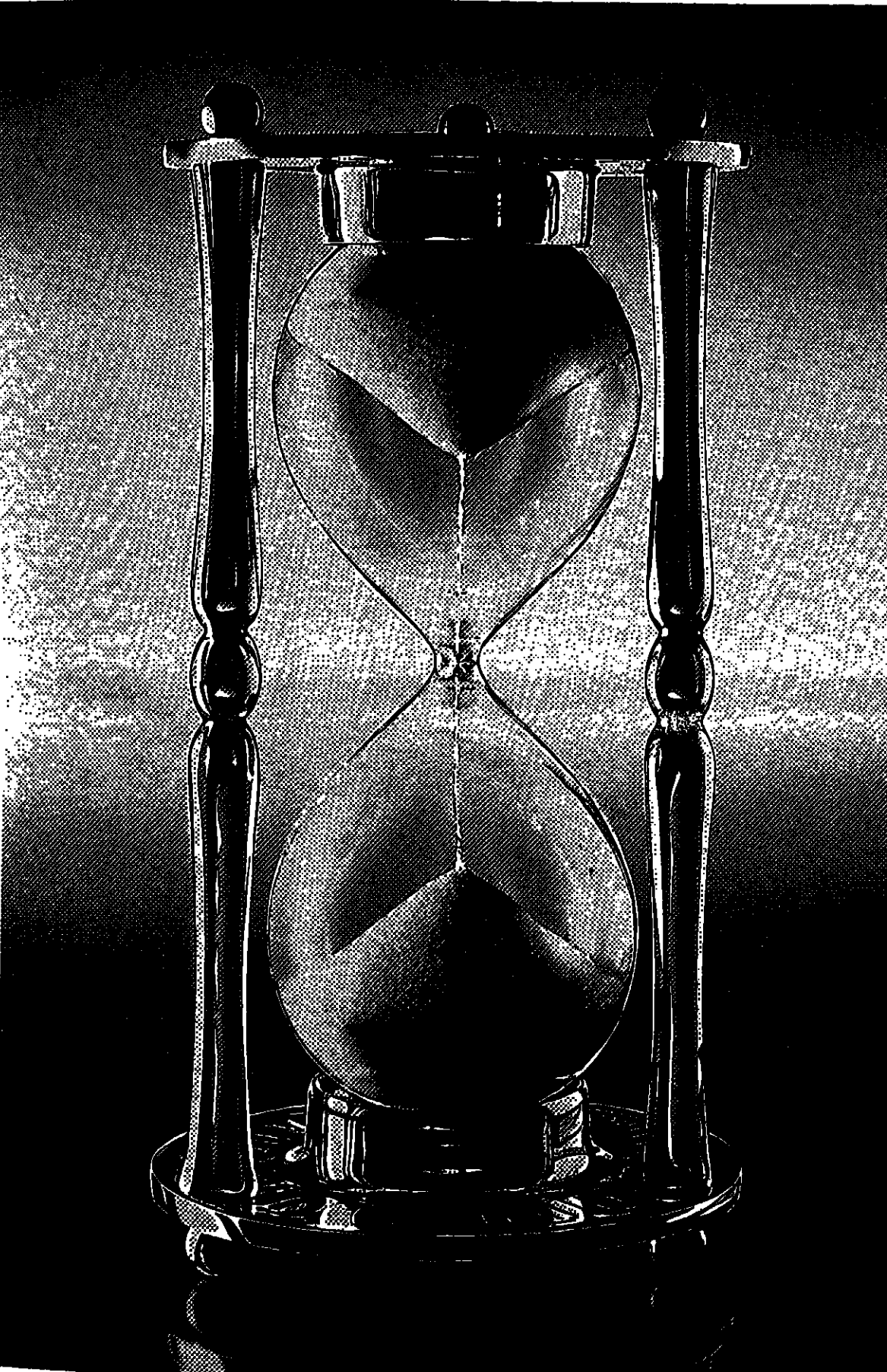
WP software heading for Euro boom

by Philip Hunter
THE European market for word processing software on general purpose computers will double in size during the next three years as it catches up with the US. By 1985 the market will be worth about £20 million, with software packages to adapt existing equipment for typesetting showing the biggest growth of all, about 33% a year.

These findings are contained in a 293 page report by international market research firm Frost & Sullivan. Until now, says the report, the European market has focused on word processing software packages for 'conventional' business minicomputers.

But in the US there have been more dedicated systems for office word processing and typesetting. Europe is expected to follow suit as union resistance to new technology, especially newspaper typesetting, continues to decline.

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Tandem and NonStop are registered trademarks of Tandem Computers Inc.

by John Kavanagh

The new housing benefits legislation comes into full force in April. A system specification has been produced for Cipfa by software house F International. About 120 local authorities have bought the specification at £325 and computer firms are now being offered it at £1,325.

■ Systems house Leasco Software is aiming at big local authorities with its Lohmacs housing management system. The system already runs on Digital Equipment minicomputers and is being upgraded to DEC's VAX 32-bit machines. And it is being converted to run on an ICL ME29 following an order from Slough Borough Council. Lohmacs has also been sold in Australia.



by John Kavanagh

Another 20 robots have been

Ford says robots produce far stronger and more accurate welding than manual methods. The output is not significantly greater — the company is building up to 950 cars a day by March — but the quality is much better.

The number of manual welds has been cut from over 3,500 on the Cortina to just 502

The national network will use X25 packet-switching communications protocols, either over private lines or through British Telecom public packet-switched services. Universities will have network gateways built into their mainframes or run on a separate small machine.

by Donald Kennett

Launching the Omnimode range last week, Racal data communications group chairman Leighton Davies said: "Modems are 60% of our business and they will continue to be a large proportion of it for the next decade. There's hundreds of millions of

A key feature of the range designed to make it particularly easy

In conventional modems these parameters are set by numbered switches or soldered links on the printed circuit boards inside the



by Kevin Cahill

This has led to further concern in Germany over the whole AEG saga, which is still unresolved even under the court protection.

Romulus TI software provides modelling facilities plus user interface features.

Romulus II adds a comprehensive user interface to the existing modelling facilities of Romulus. One major feature of the interface is cursor selection of items from

Shape Data marketing director Tony Bishop notes that user interface features for Romulus have only been available till now from vendors of complete CAD/CAM

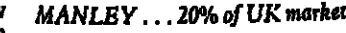
Bishop estimates 250 Kbytes the memory requirement on the host VAX for each terminal.

by Donald Kennett

Managing director Brian Mar

The Rockwell digital switch, 1

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by Kevin Cahill

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*Portable Computing Devices: A Report by Creative Strategies International, San Jose.

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by Margaret Cameron

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No tears at ICL over mainframe tender loss

Kevin Cahill gauges the company's reaction to the Swansea DVLC shortlist

"WE DIDN'T have a machine to offer. We are not whingeing," was Robb Wilmot's reaction to the announcement that ICL was not on the shortlist of two companies invited to tender for the mainframe replacements at the Driver and Vehicle Licensing Centre at Swansea.

ICL's managing director also noted, with what appeared to be relief: "We've been saved about £500,000 in terms of the cost of siting a machine at Swansea as part of the tendering."

Finally, Wilmot put the value of the CPU element of that order at about £6 million, contrary to some commentators who have suggested a figure as high as £10 million.

So far the Treasury, acting on behalf of the Central Computer and Telecommunications Agency, has selected six companies — five of them American — to compete in a final tender for £16 million worth of equipment at the DVLC.

The elements of the tender so far made public are as follows:

A central processing complex, based on a five to six million instructions per second (mips) mainframe, which will be used to replace the large ICL System 4 installation already at Swansea. IBM will compete with Honeywell for this contract, ICL, which will not have its Estriel five mips machine until 1983, did not submit its name for the shortlist.

The second element of the Swansea contract is for optical character equipment with a handwriting input capability. This contract has OCR Scandata and Scan Optics shortlisted to bid for the machines.

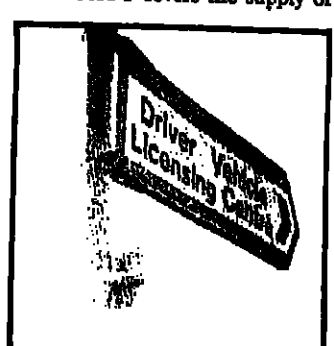
Finally, there is a requirement for printers, probably laser printers, to be installed at Swansea.

Once more IBM has made the shortlist alongside ICL, which will probably offer Siemens printers if it is selected for the final order.

Companies tendering must supply on site at Swansea the equipment they intend to offer by the middle of next year, with installation commencing at the end of 1983, and ending in 1987.

A spokesman at IBM declared the company "very pleased" and

went on to add that IBM had found the UK government scrupulously fair in honouring GATT, the General Agreement on Trade and Tariffs in force since January 1981. GATT covers the supply of



equipment to public authorities by international tender.

Earlier this year, in an uncharacteristic move, IBM sent out a Press statement making clear that if there was any sign of favouritism for local companies — in other



Swansea key-to-disc data prep operators — are they going to be replaced by OCR?

words ICL — in the Swansea tender, then IBM would complain, probably in court, about the contract.

In the event, IBM also revealed that the company had recently won an order for a 3081 to do all the Inland Revenue's internal work from the computer centre at Worthing.

Speaking about the Swansea contract, Wilmot noted IBM's recent willingness to litigate, and seems to feel that another court battle with IBM, however indirect was something ICL could do without.

It is unlikely that the government was unduly worried by IBM's threats. By allowing the entire contract, bar the printers, to go to foreign suppliers, the UK government has permitted a situation which is unlikely ever to happen in America.

Commentators over there have suggested that a Federal contract for an installation like Swansea would be awarded to US suppliers,

national security being cited to protect the local vendors.

Again by permitting an almost entirely American group of companies on to the shortlist, the government has made itself a useful reserve position in relation to the £700 million worth of equipment to be ordered for the DHSS in the next 10 years.

It will be difficult for the Americans to defeat a declaration that much of the processing involves the security of the state, or at least a substantial number of its citizens. About 50% of the population in all are paid pensions or other benefits via the DHSS.

Apart from anything else the software at Swansea, which some commentators suggest may have cost as much as £30 million, is still to be replaced. All this huge amount of code is in ICL System 4 Cobol and is not IBM compatible.

Should IBM win the tender for the central processing units, it or some other company will be faced with the mammoth task of either

converting the software so that it will run on IBM machines, or of rewriting the system.

In terms of the Centre itself, which has had more than its share of controversy over the years, the invitation to supply OCR equipment implies big changes in work

and employment patterns at Swansea.

The invitation to supply "OCR equipment", rather than "type equipment", looks suspiciously like an attempt to defuse the issue of employment at the huge and heavily unionised Keycheck operation.

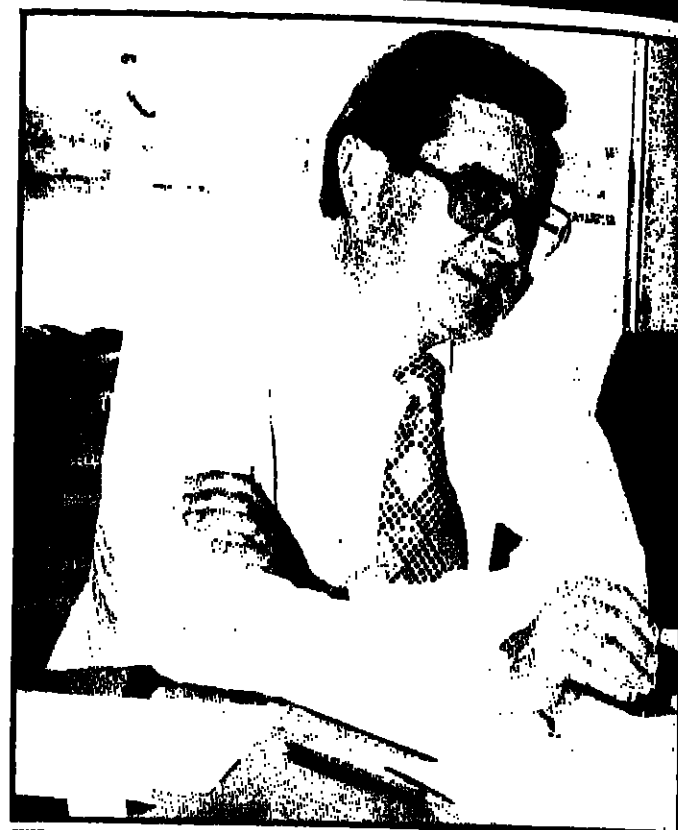
Finally, a point raised by Wilmot again is the terminal network, and presumably distributed processing machines, which will serve the decentralised elements of Swansea now that some of the work is to be farmed out to regional centres.

ICL, with its developing strategy of surrounding IBM but machines with ICL kit, looks ideally positioned to win any work going in this area. In terms of Wilmot's strategy, the Swansea project looks like the perfect ICL-ugget, where ICL will not compete for the CPU, but attempt to supply all the peripheral equipment.

In this case of course, ICL and presumably IBM who did not submit equipment, overlooked the possible use of OCR equipment for input.

Neither IBM, nor the other well known OCR specialist Lundy Farington offered equipment for the shortlist.

The handwritten input requirement and the page reader type machines are no longer in the mainstream of either company's product lines.



WILMOT... Values CPU element of the order at about £6 million.

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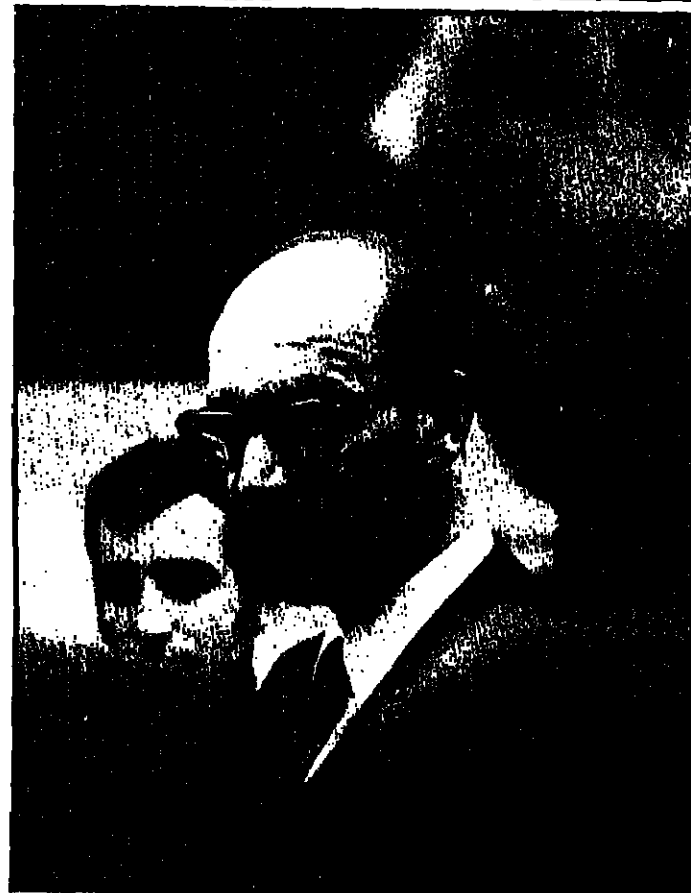
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'We made it all' — key to Nixdorf's success

PADERBORN, where Nixdorf has his headquarters, is, like the man himself, difficult to get to.

It takes two hours by car from the nearest international airport to reach there, and Heinz Nixdorf rarely gives Press interviews. When he does, it is easy to see how his company has overtaken all the other West German data processing manufacturers to become that country's biggest and most important computer company, leaving giants like Siemens, BASF and Mannesmann in the shade.

Heinz Nixdorf is 57 years old, founder and chairman of Nixdorf, and head of production at the company's main plant.

Nixdorf is a physicist by training, but like the founders of Apple he dropped out of university to found his company, which finally passed \$1 billion in turnover this year.

He says it was only in 1958,

NIXDORF, for long a relatively minor force in the office equipment market, has suddenly begun to make its name in the UK with a computerised automated teller order worth £2 million from Midland Bank.

In April the company launched its 8860 IBM-compatible distributed processing computer and

six years after he started the company that he realised the company would be very big one day.

"In 1970 I predicted that we would make turnover of \$1 billion by 1980. It's taken only two years more. We made it this year," he says.

Nixdorf employs 15,000 people to keep the company's growth well above the 20% mark which it has achieved every year since 1970, with the exception of the recession between 1973 and 1976 when sales

has just picked up an order worth £900,000 from Chevron UK. Earlier this year the West Bromwich Building Society ordered £2½ million worth of 8860 equipment for its branch network.

Kevin Cahill flew to Germany to talk to Heinz Nixdorf, the company's managing director.

growth fell to 16%.

"We are very steady," says Nixdorf, and from his temporary office in the corner of a conference room, he points through the window to the giant earth scrapers busily preparing the ground for the fifth extension to the main plant. "We will be in that building producing equipment by this time next year, and employing more people to carry on that production," he adds.

Growth is clearly an abiding preoccupation for this engineer/manager, who while remaining very German also has the feel of a North of England industrialist about him.

On a tour of his factory he pauses longest at the mechanical production areas, where his engineers build all — and he stresses the all — of the mechanical parts required for the automated bank telling machines and cash dispensers which make up Nixdorf's fastest growing sales area.

A look behind one of the tellers and dispensers being prepared for shipment to the Midland Bank in the UK makes one suddenly appreciate the interesting fact that electronics only occupies 5% of the space in the seven foot tall hardware.

Nixdorf employs 1,000 apprentices, who take a three-year training course on machines that any good Midlands engineer would recognise. These include lathes, NCK cutting machines, tool makers — all vital parts of the engineering heritage steadily being lost in the UK.

It is tempting to say that Heinz Nixdorf was lucky that the bank market opened up just when the US computer companies were left high and dry because of their policy of sub-contracting all electro-mechanical work to specialist suppliers. Nixdorf was able to retain, expand and make handsome profits out of his mechanical engineers.

But to call him lucky is to belittle the man and his vision. Nixdorf is, and evidently always was, quite certain that there was a big electro-mechanical element in the computer marketplace. He chose to avoid the American approach, and has now seen his decision pay handsome dividends.

One of Nixdorf's main European rivals, Philips, was recently forced into a collaborative venture with Diebold in the UK and De la Rue in the UK in order to offer the software, hardware, security equipment needed by banks. Nixdorf quite simply delivers the lot from inside one company.

The company employs 2,000 application programmers. "The he says, "is because Nixdorf is a service company, then an electro-mechanical company and finally a electronics company. Electronics anyone can do." The steep growth of the company in banking markets in Germany is abroad, where it supplies a range of IBM-compatible office computers and distributed processing equipment, is due entirely to its approach to service the company has adopted, says Nixdorf.

"Of the 15,000 people in employ, only 5,000 work in production. The remainder, 10,000 so, are in the field or in customer support services. We supply a complete solution to our customers, all our customers and not those in the banking sector."

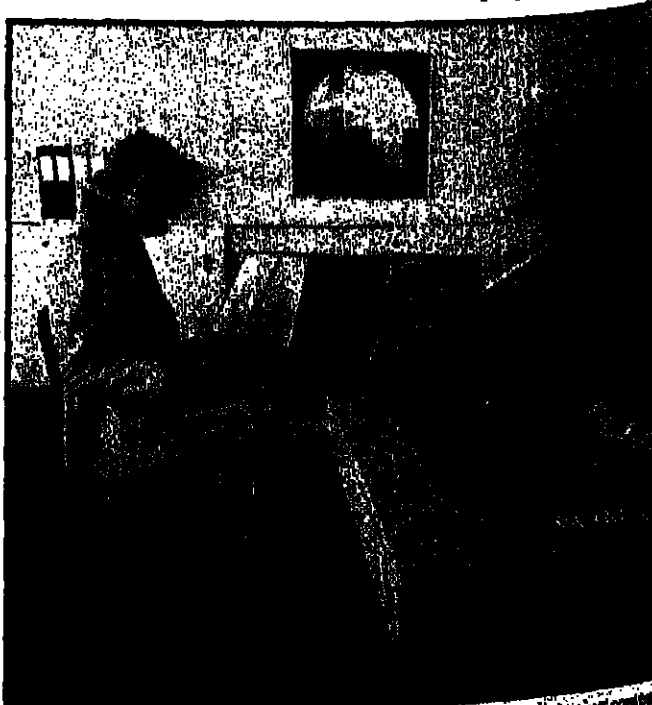
On a tour of the training centre Nixdorf, still on his theme of total supply capability, points out the walls of the plant, all five miles of them, together with everything else — air conditioning of desks, for example, everything on the roof and floor — was built Nixdorf.

Has Nixdorf any regrets? "No," he says. "We have paid over £1 billion in direct taxes over the years, and much more in social contributions. Our growth has been severely restrained by the burden."

This is not a personal loss from a get-rich-quick entrepreneur. Heinz Nixdorf, like his friend Ken Olsen, the president of DEC, lives simply. He drives a 1980 — and according to his staff, all the dividends from 67% holding in the company are reinvested each year.

His company is very well established internationally, ranked number 54 on size of turnover among US computer companies in the US market. All the offices and establishments belong to the Nixdorf company — it does no OEM deals and has no agents.

Nixdorf's growth in sales volume for 1981/82 was 24%. Inflation in West Germany is about 5.2%, so Nixdorf's growth is well ahead of all but a few of even the fastest growing US companies. So where will the company be in 1990? "We will be a \$4 billion dollar company," says Nixdorf.



Nixdorf's recently launched IBM-compatible distributed processing computer

SOFTWARE FILE

Expert office systems get a step closer

EXPERT systems as part of office automation have moved a step closer for Xionics users with the introduction of a set of telecommunications software modules.

Known as Isolink, the modules allow non-technical users of the Xibus multi-function workstation to access computer systems, applications, databases, networks and network services without any knowledge of addresses, protocols, procedures or conventions.

"The problem when talking about expert systems at the managerial level is that data cannot be held locally," said Mike Bevan, chairman of Xionics. "Managers need access to information held on internal and external databases or banks, and public viewdata services such as Prestel."

"There is still a long way to go before this can be treated as a ho-

mogeneous extension of a local system, but this is a strategic link in the long-term development."

Designed to be consistent with the International Standards Organisation seven-layer reference model for open systems interconnection, Isolink consists of a four stage development.

The first stage is the specification of session functions in plain language, while Xibus implements necessary interconnection, storage and display. This is followed by automatic conversation implementation to initiate and complete complex but regular procedures, and then automatic sessions set up on a clock or calendar basis.

Step four gives automatic "session concatenation", where the system carries out a series of interdependent access, processing and

Displayed image looks real

DESIGNERS will be able to see their work in terms of a real object at any stage of the drawing with a new package from CAD/CAM specialist Computervision.

Solidesign allows the designer or engineer to define three-dimensional parts and structures from solid geometric building blocks known as "primitives" as well as from lines and surfaces. This simplifies the design of complex structures and speeds up the production of technical illustrations, assemblies and exploded views.

Fully interactive, Solidesign can be used with any ComputerVision Instaview workstation, whether monochrome or colour, and is also integrated into the standard ComputerVision CAD/CAM software. Computervision sees the main areas of the potential market for



Building from solid parts.

the package in the automotive, light and heavy engineering, aerospace, microprocessor, electronics, architectural, mapping and construction industries.

UK Tips outlet

DATA General users could look to newly-formed Intel Software Systems for Tips, particularly if they are interested in word processing.

Knightsbridge-based ISS has on offer the Tips package developed by Information Processing Techniques in the US, which runs under DG operating systems MP/OS, DOS, RDFS, ICOS, AOS, and AOS/VS. Other items especially for DG equipment include a new release of the Supercomp financial modelling system.

Apple downloader

OWI Micro-Communications of Southwicks has announced a software downloader that will enable Apple II micro users to run programs obtained directly from Frontal viewdata frames. The downloader runs in conjunction with the existing Owitel package, which provides a direct interface between the Apple and Prestel.

Financial range

SOFTWARE house Systematics International in Suffolk has launched a range of new programs after its recent major cash injection from the APA Venture Fund. Under the heading of The Financial Controller, Pascal programs include job costing and financial planning, and they run on a variety of microcomputer hardware.

Trail blazer

AN acquisition trail is being blazed by software company Systemsolve with the buying of Athens Software, an offshoot of Zeus Hermes. The company says it is after other products and companies to enlarge its repertoire.

Software File is compiled by Maggie McLennan

Package teaches CP/M to beginners

FLUSHED with the success of its first product, a hands-on CIS Cobol training package, Microcal has launched a similar package for the CP/M operating system.

Forty copies of the £350 Cobol course were sold in seven weeks, and there are four more in the pipeline.

Designed for inexperienced end users, Hands-on CP/M Operating offers a complete training environment in which the student can explore without causing any real damage to files. It uses the same multi-user and student progress monitoring facilities as the Cobol course, which registers the exact stage reached by individuals.

"It was really a direct spin-off from the Cobol package," said Jon Shearing, joint managing director of Microcal. "We discovered that a number of people were buying our initial assessment software because it was a good introduction to the use of micros in business. That made us think that there must be a market for something more specific."

The new package actually does

more than introduce the user to CP/M, it also simulates word processing and a typical financial planning package to show the type of facilities which can be available.

One section of the course involves splitting the screen in two to show CP/M simulation in one half, with tutorial guidance in the other, so that the student can see the exact effect of an instruction or receive a full explanation of an error message.



SHEARING... A direct spin-off.



BEVAN... "A strategic link in long-term development of expert systems."

storage routines without reference to the user.

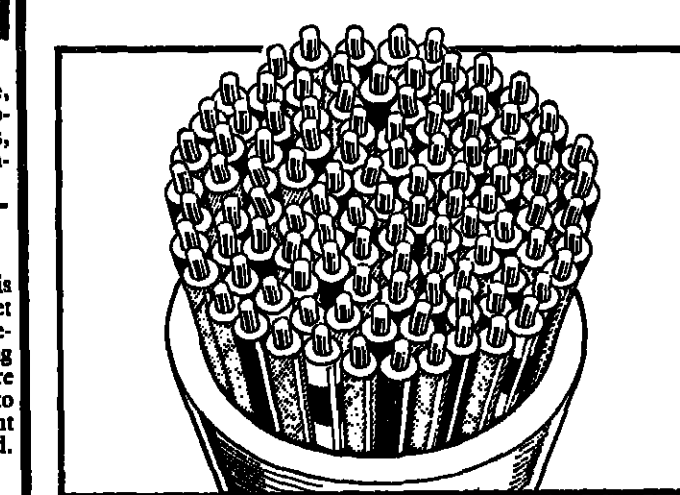
Isolink has been developed in conjunction with ICI's Mond Division in Runcorn, one of Xionics' first users, where the first two stages of development are currently being used to provide workstation access for 400 DEC 10

users, linked to an IBM 3033 at a remote location.

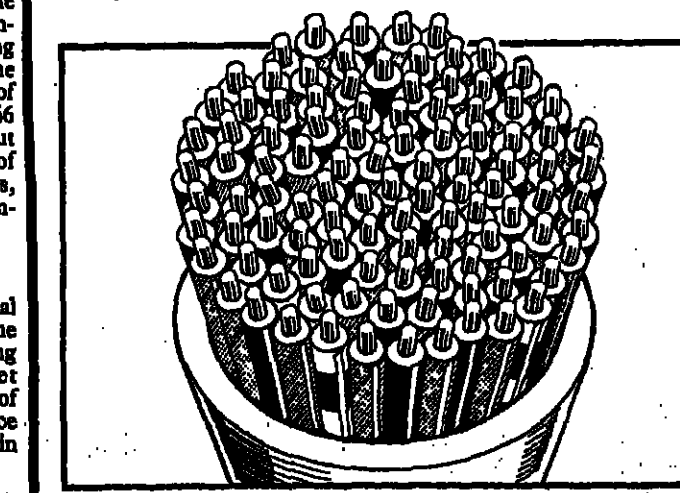
"We are negotiating terms of exploitation with ICI at the moment and have submitted proposals for consideration," said Bevan. "I think, however, that the ultimate cost per user site will be usefully below £5,000."

PHILIPS

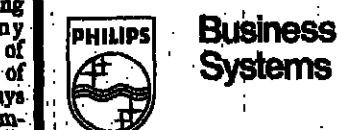
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Taking advantage of the latest developments in microchip technology, the GEC 4190 uses 64K RAMs contained within the CPU to provide modules of 1 Megabyte of main memory on a single board.

Down: power consumption.

The compactness of the new GEC 4190 has given a significant boost to power conservation. In some cases power consumption has been reduced by an astonishing 70%.

Up: performance.

In its present 32-bit, 64K RAM form, the GEC 4190 turns in an outstanding performance, but this

is only a taste of what the future holds. For instance, the basic store boards are designed to cater for 256K RAMs. When these become a commercially-viable proposition it will be relatively simple to build 16M Bytes of main store into the CPU.

The GEC 4190 is fully compatible with all the machines in the GEC 4000 Series and enjoys the facilities afforded by the award-winning 'Nucleus' central executive.

Down: size.

Incorporating the main memory into the CPU has resulted in the machine being reduced to just two cabinets. In a typical 4M Byte system for example, the new GEC 4190 takes up just one third of the space of the GEC 4090.

Up: peripherals.

In addition to the wide range of peripherals available on the GEC 4190, a new option is being offered in the form of an 8 inch Winchester type cartridge disc.

This achieves a 38% price improvement compared to conventional discs, and combines the advantages of a sealed Winchester-type platter with a removable disc cartridge.

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European semis are 'forging ahead'

EUROPE is awakening to the advanced semiconductor market. And America's view of Europe is changing in recognition of this.

Charles Sutcliffe, recently appointed executive director of the US Semiconductor Equipment and Materials Institute, Semi, has reported signs of recovery in the US semiconductor industry, and reckons that despite odd fluctuations recently, September could well see an upturn in the market. "One reason for our increased optimism is the European market, which frankly has been one of the reasons for our depression over the last couple of years," he says. "Now we see Europe forging ahead in its quest for semiconductor technology."

The American perception has been that Europe lagged the US in semiconductor technology, he adds, but that was not a view he held. He criticises European equipment for not being highly automated, though it is good scientifically. In support of this he holds up developments like the UK invention of ion implantation.

Sutcliffe gives two main reasons for the awakening of the European market - the establishment of objectives by the EEC for semiconductor production technology, and

the growing number of joint ventures in Europe that combine the technology and resources of European and American interests. The EEC's shopping list includes the most advanced techniques, says Sutcliffe, and the priorities centre on production equipment rather than the semiconductors themselves. This mirrors the current trend in the US, he adds.

SUTCLIFFE ... increased optimism about the European market.

added next month. The progress of Series 8000 from development system to office system is following a similar pattern to the eight-bit MCZ systems. But European marketing manager Dr Pamela Geisler said that this time the company was avoiding two expensive mistakes.

Firstly, Series 8000 has from the word go run under a standard operating system rather than a proprietary one. Series 8000 runs under Unix version 7, while the MCZ ran under Zilog's own Rio operating system at a time when CP/M was rapidly becoming dominant.

Secondly, the new models in the Series 8000 range include cheaper cut-down versions for smaller installations as well as the more expensive and more expandable version.

UK systems managing director Phil Pittman said the company was now recruiting distributors to handle the smaller systems houses and self-sufficient users, supplementing its existing seven main systems house customers.

The machine supports between eight and 24 users and, with an optional communications controller, can be connected to Zilog's Z-Net II 800 Kbit-per-second local area network. Z-Net II uses the U-net networking software from 3Com in the US, which is designed to be independent of the network transmission system.

UK sales manager David Bethal said this would enable Zilog to substitute Xerox's 10 Mbit-per-second Ethernet system when the availability of chip-based versions made it cheap enough for the office market.

NCR leaps into 32-bit market

COMPUTER manufacturer NCR has taken a leap into the deep end of the semiconductor market with the introduction last week of a 32-bit microprocessor. It has launched a four-chip set, to be sampled to other computer builders early next year, which it claims is the most powerful available commercially, with the computing power of an IBM 370.

NCR joins semiconductor house Intel in supplying a true 32-bit processor to the merchant semiconductor market, estimated at \$100 million in 1984 for 32-bit chips. As most of the promised 32-biters are not due till the end of 1983 or into 1984, NCR is well to the forefront of the race.

The NCR chip set, called the NCR/32, is expected to find a market with people building anything from mainframes down to personal microcomputers. It offers power accompanied by an average cost reduction of between 30 per cent and 40 per cent, claims NCR - with the advantage of compatibility with existing computers through its external microprogram store. This will allow instruction sets to be tailored to fit existing software.

The microelectronics division at NCR only moved into selling semiconductors on the open mar-

ket in June last year. But it developed an eight-bit microprocessor several years ago, for internal use, and has been manufacturing a number of other processors under technology exchange agreements. The NCR/32 set was developed entirely within NCR.

The product will be available to customers in Europe in the same time scale as US buyers, says Steve Morgan, assistant vice-president for marketing in NCR's microelectronics division. "But we will very carefully control the product," he adds, "with most sold under non-disclosure agreements." NCR itself will be coming out with a range of board products using the chip set, as well as computers using the NCR/32.

Such non-disclosure conditions will also apply to development support for the chip set. Morgan says that development support is already in place, but prefers not to specify what form it takes. But he does claim that the supply of chips and support tools is not limited by product availability.

In entering this market place, NCR faces competition from many established suppliers of high performance microprocessors. The four major 16-bit processor families - from Intel, Motorola, Zilog and National Semiconductor - all

have 32-bit internal and are cousins on the way, and the iAPX 432 chip set is available.

Intel's iAPX 432 has been shipped in small quantities over a year now, but it does follow the Intel 16-bit family. It is not code-compatible with 8086 and its derivatives, as claimed by NCR to be 10 to 20 times slower than the NCR/32. The iAPX 386, is due to be seen in 1984.

Zilog's 32-bit processor, like the Z8000 (four months) at the moment, is also planned for 1984. The development programme is well under way, according to UK managing director Pittman. This device will be compatible with Zilog's 16-bit chip and will run Z8000 code.

But before these Intel and Zilog family offerings hit the market other main semiconductor houses with designs contending for general purpose processing market - Motorola and National Semiconductor - would have produced samples of their new 32-bit processors. The 16000 stable expected next year, while Motorola's 68000 is due to be sampled in the first quarter of 1983.



Geisler, Bethal (centre) and Pittman ... avoiding expensive mistakes.

Controller for Arcnet

AN INTEGRATED local area network controller chip, Arcnet, the local net development unit, is now commercially available from Standard Microsystems through its UK distributor, Hattian Skyline.

The Standard Microsystems 9026, a 16-bit microcontroller, contains all the logic necessary to control the token passing mechanism on the network.

The single VLSI circuit can place about 100 small or medium scale integrated circuits.

Arcnet was introduced by the point in 1977, a hardware implementation of the company's token passing network. It is a self-polling token passing network running at 10 Mbit data rate.

NEC, Q1 Europe link to develop local net

JAPANESE microcomputer maker NEC has joined the rush towards local networking. Its European arm has developed a system in conjunction with Southampton-based Q1 Europe to link its PC-8000 personal micro into a hard disc based network of up to 64 machines.

NEC claims the network is faster and more versatile than other networks designed for microcomputer use because of Q1's established intelligent local area network and Winchester disc controller used in conjunction with Q1's operating system. The network is compatible with the NEC CP/M version.

System software includes bad track identification and substitution, optimisation of the disc head movement, automatic error detection and correction, and general polling to give even response times to each PC-8000 attached to the network.

Users' own operating environments can be made secure, with file and record locking provided.

Currently the limit on storage in the system is 160 Mbytes. A simple daisy-chain scheme is used to connect units on the net via coaxial cable. Individual micro can be removed from the network even while other users are connected, without data corruption affecting the performance of the network, says NEC.

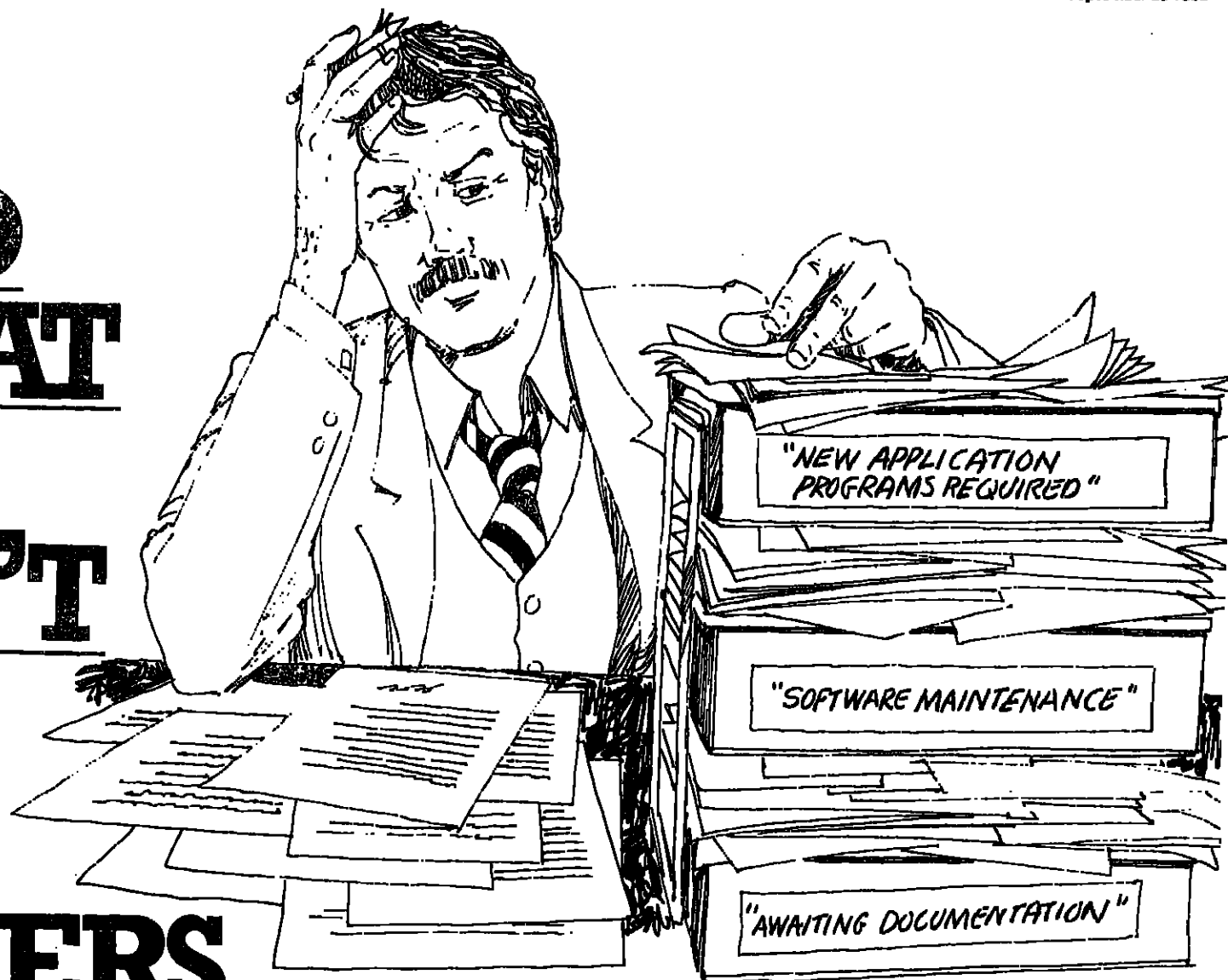
All other users will notice an interruption of a few seconds while the ends of the daisy chain are reconnected.

NEC has also announced a set of business programs for the PC-8000, written in Pascal and called "Business Controller". Four modules are available, sales ledger, purchase ledger, general ledger and invoicing. They form an integrated business suite.

Each module is supplied as a program on a diskette and can be driven by two or more 514-kbit disc drives. The software suite was launched in the UK early this month at the Personal Computer World Show held at the Harrogate Centre.

Micro News is compiled by Robert Parry

IT'S A SAD FACT THAT HUMANS JUST CAN'T KEEP UP WITH COMPUTERS



A few years ago the biggest single problem in computing was the man/machine interface. Since then the machines have advanced enormously with power, speed and capacity increases measured in powers of ten. Man, you may have noticed, is still much the same specification as before.

Consequently the man/machine interface problem is still with us and getting more critical. User departments are being told that new application software cannot be started for months and will take even more months to complete, debug, test and implement.

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WEB the shredder people

Burroughs' top team look cool and confident

BURROUGHS' new UK managing director, Bob King, is a quiet, thoughtful man with the look of a successful manager and businessman — which, indeed, he is.

After the army and university he entered management as a trainee, and rose to top, heading a £600 million hotel and brewing company before joining Burroughs. He has no experience of the computer industry except as a user, and admits this freely.

But his number two, David O'Brien, who was appointed to the newly created post of sales and marketing director at about the same time that King joined the company, is a true industry man, and almost true Blue.

O'Brien is a former IBM marketing man. He worked both in the UK and IBM Europe, mainly in public sector marketing, experience which will come in very handy at Burroughs, given its publicly stated intention of attacking ICL's public sector base.

It may seem strange for a successful businessman like King to leave a powerful position at an autonomous company like Scottish and Newcastle to manage the UK subsidiary of a US-owned computer company.

King admits that it seems strange at first, but points out that the computer industry is not the same as it was 10 years ago. He sees Burroughs UK as a fresh challenge after already reaching the top elsewhere.

He also views it as a stepping stone. With such a successful career to date King is unlikely to remain the local head of an overseas subsidiary, when there may be more interesting jobs in Europe or even Detroit, where Burroughs has its headquarters.



KING... part of a formidable management team.

Michael Blumenthal, Burroughs' chairman, has not been slow to appoint outsiders into key positions so far. About 80% of his top managers have come from outside the company, as he did. King began his career at Metal Box, the UK packaging concern, where after several spells abroad he worked his way to the top. During one of his overseas assignments he gained a business management qualification from Harvard Business School. He reigned supreme at Scottish and Newcastle from

1977 until this year. O'Brien brings a wide knowledge of the computer industry to Burroughs. In addition to his 14 years with IBM, he was the managing director of Cray Research (UK), after which he held a senior position with Tektronix Europe for a brief period. King and O'Brien make a formidable team with their business expertise, and industry knowledge and experience. They could be just what Burroughs needs to pull itself from the doldrums of years past.



Big machines have a major role in the world of the micro

applications, but in most cases a mainframe is needed to process and refine the data so that it can be used as an effective corporate tool.

In some instances it may appear that the distribution of computing to several sites within a company provides the best use of data processing; however, as a company develops to match its expanding markets, or grows by mergers and take-overs, this splintered approach can result in a completely unco-ordinated information resource that can not provide accurate financial and operational reports.

The central mainframe offers a unified and integrated system to handle management, marketing and operational information. There are applications where sheer number crunching capacity is essential, and where such operations would be impracticable without a powerful computer.

Examples of these applications are weather forecasting and the exploration and exploitation of oil and gas resources. There are also large networks, either public or private, which may have thousands of users. This calls for fast and accurate handling of multiple and simultaneous accesses to massive data.

The introduction of "office automation" systems is another area where efficient implementation needs a powerful and flexible central processing capability. Electronic mail, word processing, personal files with restricted access or company files with wide and frequently changing access authority, general business administrative routines — all of these must be catered for and be available throughout a company.

Similar needs have to be met in the industrial and manufacturing sectors where CAD/CAM, production engineering and process control techniques can all be handled and made easily accessible by mainframe based systems.

The market, that is the user and potential users, is not yet fully aware of what is going to hit it in the next five years. Costs, not just salaries and wages, but space, furniture, facilities, fringe benefits and so on, could over the next 10 years, be as much as £30,000 per person per year. This strengthens the argument for making the most effective use of every person employed and of the equipment installed.

There are now thousands of small business systems and mini in use, the cost of which can be justified at present. Soon there will be a different equation. Hardware, accommodation, air conditioning, etc, will be cheap, but staff will be expensive. Equipment will need to be used more effectively and it will not be economic to have staff whose job it is only to operate terminals — this task will be absorbed by end-user departments where the terminals will be used as a normal part of the day-to-day work.

Systems based on mainframes provide the answer. This is a distributed processing. This is how the information resource can be efficiently used. This is how the large investment in capital equipment can be justified and made to pay.

Bill Ral
Read is vice-president and general manager of Sperry Univac UK.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, September 23, 1982

Caution needed on DHSS plan

THE government's grandiose plans to computerise the welfare state will need to be closely monitored if they are not to founder on the shoals of overambition. After the DHSS came unstuck on the ill-fated and more modest Camelot project to automate supplementary and incapacity benefits, a word of caution is needed before computer hardware and software companies join the chase for the £700 million bonanza of orders that are promised.

The Camelot project, it will be remembered, was to spread 26 ICL 2950s over twelve regions, with terminals online for local offices. Serious problems with the design of the system surfaced in the summer of 1981, and it was officially scrapped at the beginning of this year.

The new plans for computerising the entire social security system, including unemployment benefits, envisage a network of 70 large computers, 30,000 terminals and 3,000 microcomputers. But perhaps recognising that the romantic acronym Camelot promised more than it could deliver, the latest proposals are called more simply "Social Security Operational Strategy".

Despite publishing 84 pages on the new scheme, the DHSS makes clear that it is a consultative document. "It is not set out in concrete as a definite plan as to what will happen over the next 10-15 years," said Tony Newton, Parliamentary Under-Secretary for Social Security.

It is in the interest of computer companies in the UK to make sure their voices are heard before the concrete mixers start churning. If the project goes ahead, some of these companies could be putting a sizeable portion of their resources at risk. And the success or failure of the project will be no small reflection on the British computer industry. Most of the recent buzzwords of technology are incorporated in the DHSS strategy; a haphazard implementation would have repercussions far beyond the now overburdened benefit offices.

The government has emphasised that it will be looking outside the Civil Service for help in developing the system. That should come as a welcome change to third party software companies, which have often felt they have been closed out of the government tendering process.

But it will also arouse the ire of the civil service trade unions, who are already seeing flashes of red at estimates of 25,000 job losses.

Under-Secretary Newton said "the long-term framework dwarfs the rest of Information Technology Year." That may be true. In the long term. But in the short term it is the duty of all the doubters and doomsmongers to come out of the woodwork and give the strategy a searching review.

ICL's belief in itself

IF speculation that ICL is about to launch a £100 million rights issue is true, managing director Robb Wilmot and chairman Christopher Laidlaw have indeed performed something of the miracle that was expected of them. Just over a year ago the UK computer firm was reporting massive losses and making draconian cuts to its workforce. The market for ICL products was depressed. Wilmot and Laidlaw promised to put things right, but it would all take time.

Now, Wilmot says he is convinced that their predictions of profits and sales will come true. The company has not had to use any of the government's £150 million in loan guarantees. And a rights issue would confirm that the company has enough belief in its own future to brave the scrutiny of the financial markets.

Contrast ICL's position with that of France's state-controlled computer company, CII-Honeywell Bull. France has been making headway in formulating a national computer strategy, and CII-HB has been singled out as central to those plans. But the company is in dire financial straits. Whether Stern can do for CII-HB what Wilmot and Laidlaw have done for ICL is yet to be seen. But certainly ICL's experience in the past few years once again highlights how important a strong and determined management is to a company's success.

1984 and all that

THIS week's example of the strange things people say about computers was sent in by B. Twissell of Coventry, who wins £5. In the latter half of the 20th century, the landscape has been squeezed into a growing uniformity. Viewed from above, by approaching Venusians say, Planet Earth may well appear to have been set in order by computer and the little green men will probably wonder why they bothered to come all this way.

Darkcrest and Digital Equipment

I READ with interest your article (CW, September 9) relating to litigation between Darkcrest and DEC, whose processors we use in products we supply. There are a few discrepancies I feel need rectifying:

1. With regard to "substantial" damages against Darkcrest, we have not received any direct notification of any claim from DEC.
2. We have just completed our second year, not first year as indicated.
3. Darkcrest is seeking £10,000,000 exemplary damages from DEC, partly on the grounds that its original application to the High Court was not "full and frank", as is normally required for an Anton Pillar Order.

4. We have given no undertakings to the court that go above and beyond normal English law.
5. DEC has offered to settle — we have turned them down on the grounds of inadequate compensation for Darkcrest based upon what we regard as the inappropriate nature of the action DEC has taken against us.
6. Darkcrest consists of 14 staff, not six; our total turnover to date is in excess of £1,500,000 and our balance sheet surplus is in excess of £150,000.
7. Our product range incorporates the LSI-11, all PDP-11 models and soon the VAX-11, not just the computer processor you noted. Also, our customers vary widely and use four different DEC operating systems and Unix (which has been the most

popular by far).

Regarding details of the litigation, I feel it is inappropriate to have a "trial by publicity" situation. We must all wait for the English courts to conclude this matter.

Meanwhile, it is worth noting that the result could well have worldwide implications relating to the resale of computer systems with the prime manufacturer's software. It appears DEC is saying we have no right to do this even when we have purchased and paid for a licence to begin with.

NICK BRACKENBURY
Sales director
Darkcrest
London SE1.

Made in England

PAUL GRETTON-WATSON's excellent report on 999 systems (CW, September 2), contained one inference which is often made, in the phrase "a sophisticated US-developed Soundex phonetic searching technique". The implication being that anything "US" must be better.

I designed the Metropolitan Police gazetteer database and search program and coded the program. The basic Soundex codes were just published in the early 1900s, long before the advent of electronic computers.

The sophistications for the police system were developed by myself, a genuine Englishman!
P. R. HARRISON
Harrison & Cripps
Stonehouse, Glos.

Unix III licence

YOU stated (CW, August 12) that CDS is the only UK company to take a Unix licence. This is not true. We too have the Unix System III licence and have been using Unix extensively on our DEC VAX-11/750 since April.

We have been converting Quantum (our survey processing package) from Prime Fortran to the language C, and are now ahead of target.

First delivery of a VAX-11/750 with operating system and application package will take place during October. We are now installing Quantum on some of the larger 68000-based micros operating under Unix.

JOHN SANGLER
Systems director
Quantum
London WC1.

Shout of alarm

A SMALL shout of alarm at the apparent total lack of critical criteria as applied to articles printed in CW.

- Two recent examples:
1. The utter gibberish attributed to an Arnold Arnold (CW, September 9).
2. The impossible claims made by B. Khan concerning supposedly revolutionary new storage technology.

The former case is just funny, the latter shows a worrying credulity by people (such as yourself) who are supposed to have some knowledge of computer science (cf H. C. Anderson — 'The King's New Clothes').

T. CLARK
London W5.

Focusing on DBMS

ON RETURNING from holiday I read with interest your recent Software Month feature (CW, August 12) and noted an article by David Ferris on DBMS.

This article referred to a product Focus which is owned by Information Builders Inc and marketed in the UK by my company.

The impression given by the article regarding Focus is so misleading that I believe it is necessary to re-state the facilities offered by Focus to users. These include:

1. A complete report generator and query language.
2. A comprehensive graphics, statistics and financial modelling capability.
3. The ability to read data from Focus D/Bs (see below) as well as directly from other D/Bs such as

IMS, IDMS, Total and Adabas and other file types including VSAM, QSAM and KSAM.

4. Focus D/Bs are multipath hierarchies that can build shared and therefore relational-like structures. These Focus files can be combined with other D/B structures and file types in almost unlimited ways to create new "virtual" files and structures that can then be used for reporting, graphics etc.

5. Data entry and file maintenance is provided by conventional transaction processing or a full screen based data entry language supporting multiple transaction types and multiple simultaneous user updates.

P. R. SCAWEN
Managing director
Information Builders (UK)
Wembley, Middx.

Programmers aren't obsolete

THERE are an increasing number of system development and program production aids de-professionalising the programmer's job, and requiring extra effort and knowledge to achieve the same ends as before.

I am not advocating a return to all assembled programming, but surely a professional is someone who can confidently say that he understands his craft and field of specialisation well enough to produce his product to the required standards.

Some of the systems currently in use require such a terrific background of knowledge and experience that it is almost impossible to familiarise oneself with the whole system or even all examples of its use.

To take an IBM system as an example, a programmer might have to learn Cobol, JCL, TSO, SPDF, DII, CICS, IMS, MVS, OS,

DOS, Casort, Easytrieve, Filetab, etc. ad infinitum.

Until one understands all these subjects completely, one cannot be sure of being able to use any one subject optimally in the solution of a problem.

Some systems are transparent to the user (like a black box) and allow him to concentrate on solving the application problem rather than solving the implementation problems.

A lot of the available aids have a lot of unnecessary options but lack some very basic ones. I think Cobol would be vastly improved (and fairly useful) if it had "BEGIN — END" statements and compound parameter facility, i.e. being able to access array element array(x + y), and in the PERFORM UNTIL, having condition until "x+y = n or w(x,y) gt z".

MARTIN BANCROFT
Crumpsall, Manchester 8.

It's hard to get into computers

ONE can only sympathise with Mr Hill's complaint about the reception given to TOPS graduates (CW, August 26). This company receives about one application per month throughout the year from all over the UK and all letters are answered with advice given.

Entry to the computing profession has always been difficult, at least in the 16 years since I entered it. A major factor in this situation is the ready mobility of trainees once the initial and costly training has been received from a larger company. Various remedies have been proposed to overcome the loss of computing staff, and there has been some success, but this is a major reason for a company's reluctance to recruit trainees instead of experienced staff.

The mainframe boom has long since finished, and very few such installations are set up each year. The microcomputer boom continues, and is on a list showing more signs of plateauing out. By comparison, the microprocessor boom is at its beginning, and the end of their potential uses cannot yet be foreseen.

There are now a large number of companies entering microproces-

sor-based applications. The potential applicant is recommended to seek out and approach such companies with the proposal that they should make the recruit responsible for the microprocessor, its software and its programming. It is very well necessary for the applicant to undertake other work in the company.

Skill with microprocessors is a distinct speciality in its own right. Potentially it is at least as valuable as skill with large mainframe computers.

SEANOCK Computer Services
Sevenoaks, Kent.

Meaning of Pascal

EMRYS Jones's masterly explication of the true meaning of Basic (CW, September 9) prompts me to remind those of your readers who may have forgotten that Pascal, contrary to rumours put about by some of the devices, is in fact an acronym for *Paritential Academic's*. Strictly Controlled Authoritarian Language.

A. C. KILGOUR
Computing Science Dept
University of Glasgow.

DOWNTIME

The Crunchie gets kitted out

APART FROM an insidious reduction in weight, the Crunchie bar of my youth has changed little. Nor until recently had its mode of production.

But now Crunchie maker Cadbury has installed a Ferranti computer system to control the mixing, cooking and cooling of the famous bars. This process, I am told, is no easy matter, since chocolate, in the parlance of chemical engineers, is an ill-behaved fluid. It tends to clot and form bubbles, which can result in malformed Crunchies.

So while every precaution is of course taken to ensure that the Crunchie bar in the shop is of the usual impeccable quality, the occasional rogue slips through. Hence the familiar offer of a refund if fault is found.

The computer system should reduce this risk with its assistance in the mysterious and vital task of "enrobing", which I was touched to discover is merely the simple matter of coating the bar in milk chocolate.

10 YEARS AGO

From Computer Weekly of September 21, 1972

The Post Office revealed its plans for an experimental packet switching service (EPSS) which it described as a joint venture between users, manufacturers and itself... Freelance Programmers, now better known as F International, celebrated its tenth anniversary... Compec 72 attracted 43 exhibitors showing on 60 stands... Some makers including ICL poured scorn on IBM's trumpeting of its newly introduced virtual memory. They'd had the idea years ago.

Sord sheds its mystery

THE TONE of an advertising campaign is governed by the notoriety of the product, be it a computer or a contraceptive. If it is unknown, then the idea is to familiarise the public with it and make extravagant yet believable claims about it.

But if the product has a household reputation, then a subtler approach may be taken. The product need not be named, and the intellect of the advertiser can be appealed to.

The logic is that a person is more likely to buy a product if his brain has first been given a free jerk into motion.

Examples: the large poster campaign for White Horse whisky in which a seven foot American basketball player was depicted beside a white horse. It was supposed to evoke an image of a Scotch and American Dry.

The danger of this type of campaign is that it falls flat if the public does not know what the hell it is all about.

I wondered at first if the Japanese manufacturer Sord had made this mistake when it ran an advertisement in a well-known weekly computer newspaper with the slogan bearing its name and the display:

"If you started to learn Basic last

week — forget it."

What the hell is Sord talking about, I asked myself. This was surely an even more subtle kind of advertisement making yet greater demands of me. But I turned over the page and found the answer. There in a display of the same size was Sord's answer — its language Pips.

Clearly Sord is after all aware that Pips is not yet a household name.

Racal shares out its Harenet

I AM in a position to reveal a fascinating piece of recent data communications history.

The local area network launched earlier this month by Racal was developed under the leadership of one Peter Hare and was, not unreasonably, known during development as Harenet.

As the time approached when this wonder of modern technology was to be launched on an exciting world, thought was devoted to giving it an official title. Again not unreasonably, local opinion held that it could not possibly be effectively marketed under its development name — although who is to say it would not have acquired fame far beyond its field of application, even entering the language

IF YOU SAY 'DAMN', IT
SCREWS UP THE HARD COPY
AND CHUCKS IT IN THE BIN.



Can you take Ken seriously?

PUNCH, the laughter magazine of the top-hatted class runs a column on Parliament by Simon Hoggart, who is fond of categorising the members of our legislature. MPs are either smart or flash, for example. Smart is Lord Carrington, flash is Michael Heseltine.

Another category is TABS. The Ability to Be taken Seriously. David Steel has it, Keith Joseph has lost it.

How does our information technology minister Kenneth Baker make out on these 1 wonder?

The first part is easy. Ken could never be called flash, so he must be smart, unless one entertains a third "screcrow" category for Michael Foot.

But on the question of TABS I equivocate. Ken is conscientious, usually quite well informed and is a personable fellow. Industry people see him as a splendid spokesman to the lay public, but

Painter Grant gets a rocket

LOGICA and British Aerospace are sponsoring leading international artist Keith Grant to record the European Ariadne rocket launch, to be held in French Guiana, for cultural posterity.

Why wasn't Logica's in-house artist Philip Hughes chosen?

The answer is to be found in Davy Jones' Locker, in which the first Ariadne rocket made an unscheduled landing. Hughes is only interested in success as reflected in his rather ethereal portfolio.

However it is the initial Ariadne flop which excites Grant. One can only speculate how he will depict the second launch in Guiana.

There is a hint in Grant's own words: "I see the wonderful order of the natural world complemented by both philosophically and artistically the engineering perfection of the placing in orbit of a satellite." Here Grant is referring to the close proximity of a primeval jungle to the launching pad. I am sure he did not mean it to be facetious.

Helpful Hint

Don't throw away those orange plastic spindle protectors from 200 megabyte disc drives — they make admirable frisbees.

Chad



Site design needs more care, says report

THE computer room is now the brains behind many organisations, and as a result is surrounded by a solid skull of internal security measures. Yet it is often insufficiently protected against hazards that strike from within, as followers of our Disaster columns will know.

Many computer rooms are just knocked together by joining a few existing rooms and fitting ceiling ducts for air conditioning. They are often cramped, badly lit and noisy.

A report* by the US Datapro Research Corporation campaigns for more care in designing computer rooms.

The study mentions a factor often forgotten by first time computer users, electromagnetic interference caused by static electricity. Hardware is particularly sensitive to this, and it can cause bits of data to vanish, or a disc head to crash. Static can be minimised, says Datapro, by using laminated fibre-reinforced material, or a static-treated carpet for the floor.

Hardware is also sensitive to fluctuations of temperature and humidity, and these should be carefully planned. Datapro recommends measuring equipment to ensure that the equipment is shut down when temperature or humidity move outside the allowed range.

Another important consideration when designing a computer room is the power supply. Continuity has to be ensured.



Hardware is smaller than it was. But still computer room architects fail to make provision for new equipment.

The cheapest method is the filter, which consists of a configuration of inductors and capacitors. Filters cater for random fluctuations of power, but are not good in the event of prolonged interruptions.

A popular, but more expensive method of minimising risk of power crashes is the motor-generator, which uses the normal supply to drive a motor that generates a cleaner supply.

Equally important are ergonomic considerations such as space, lighting and access. Most computer rooms are too small because no allowance was made for expansion and adoption of peripherals.

A related problem is that of noise. Noise dampening materials can be used in construction of walls and ceilings, and careful positioning of hardware and air conditioning blowers will help further.

The report is admirable as a complete catalogue of problems facing the architect of a computer room, but it is less helpful when it comes to recommending solutions. Cost, efficiency and luxury have to be balanced against safety, and not all the answers suggested by Datapro are compatible.

*All About Computer Room Environment. Datapro Services SA, CH-1164 Buchillon, Switzerland. Tel: 021 763731.

Sharp technique nets the worthwhile jobs

THE data processing industry is notorious for its fast job turnaround, and an important weapon for every young programmer or operator is good self-publicity.

Every prospective job is won or lost less on ability than on the way skills are promoted. Attention to a few simple details can greatly enhance the chances of landing plum appointments, and so Workplace offers this compendium.

An often neglected part of the job-getting process is the curriculum vitae, which is instrumental in obtaining an interview. A good CV tells no lies, but should give the truth plenty of polish.

It should be neatly typed, and should list details of each past job as well as individual skills gained such as computer languages, operating systems and machine types. It might also be wise to include details of programs written, and individual projects participated in.

But no job application is complete without the personal touch of a handwritten letter exaggerating, as far as modesty permits of course, those parts of the CV relevant to the job in question.

First impressions are important and a smart appearance, though less vital than it was, can still count. I once turned up for an interview wearing a big blue trenchcoat, intending to take it off before being shown up by my prospective employer. But instead he met me at the station, and at first glance, I could tell he had written me off. The rest of the interview was an embarrassing formality.

You may be invited to sit an aptitude test sometime during the interview. These have rightly fallen out of vogue with psychologists and are less common than they were, but it is well to be prepared.

They do not vary much, usually involving the derivation of the next number, letter or geometric shape in a series. They have little to do with skill in programming or analysis since they only allow for one solution, while real life often allows several answers.

Where aptitude tests are given, they are normally only used as evidence of ability in borderline cases, the face-to-face interview being the clincher.

It is doubtful whether the interview is really much use in selecting the best person for a job. I was once told by an experienced interviewer that its only worth is in finding out how well motivated someone is.

Interview technique improves with practice, which is one good reason for making many applications. It is important to remember that the interview is a two-day affair, and that the prospective employer is just as much on trial as the applicant. An employer is rarely put off by intelligent questions about his organisation and the job on offer.

A good ear for the tone of the interview can often reap the corn. Most interviewers have their own idiosyncrasies and pet likes and dislikes that an astute applicant will ponder to.

At one interview I was asked if I approved of the use of flowcharts

in program development. "They are a complete waste of time," replied. Months later at an interview this interviewer was insulted with a little Dutch impertinence and he confessed that this bad utterance got me the job. Yet the tone of his question had given away the answer he had wanted.

It is surprising how many interviews for technical jobs stick to platitudes and generalities. Nevertheless technical questions will sometimes be asked and it is well to be wound up for them. The best way to do this is to read a elementary book on the subject likely to be covered.

For example, if the job is for a Cobol programmer, a quick read of an elementary Cobol manual focuses the mind on the key points and prepares it for the sort of basic question likely to crop up.

The final hurdle to cross in the reference, something more out of the applicant's control. Really good references are rarely given - referees use their own Masonic language to communicate the deficiencies of the candidate.

The best way to obtain good references is always to be hard working, punctual, likeable and honest. This is clearly impossible, but the applicant does at least have the choice of referee and can avoid people likely to libel him.

The ideal attitude to an interview is captured in the aphorism: tell the truth and nothing but the truth, but not the whole truth. Sounds like the attitude of a cynic - but it is no more than a reality of life.

It's a real time occupation, keeping systems software fully operational

The third part of our series on changing job functions and titles, by Les King.

"SYSTEMS programming ain't what it used to be."

That's according to my friend Jack, who should know because he's been doing it, man and boy, for the last 13 years.

So, from the many career possibilities available in computing, what sort of job is it that keeps an intelligent (I promised him a good write-up) interested for so long?

Well, the most important part of the job involves very little programming and might better be termed "systems administrator".

The major task is, in essence, to keep the computer systems software fully operational. This has become increasingly important in recent years because of the average company's growing commitment to computing as an essential business tool.

Keeping the system up and running is, in every sense, a real time job requiring the ability to stick with a problem until it is solved, coupled with a minutely detailed knowledge of both hardware and software.

When he is not sitting up all night holding the system together, the systems programmer spends a great deal of time installing and maintaining new system software.

Despite the mystique surrounding the systems programming function, this is not a terribly difficult process as most new software releases arrive, from the manufacturer or whoever, with a ready-made job stream capable of producing a working system with very little intervention.

The systems programmer will have some work to do, such as defining the configuration, allocating partition sizes and ensuring all-round compatibility with the existing software.

System tuning is an interesting

part of the job, although the falling cost of hardware makes it increasingly feasible to purchase more memory and equipment rather than spend valuable time maximising the use of limited systems resources.

However, effective improvements in performance can be achieved by basic techniques such as the organisation of program libraries with the most commonly used routines together (to minimise disc head movement), the holding of frequently used file indexes in memory, and the intelligent scheduling of job streams to avoid simultaneous use of the same systems resources.

It should be pointed out here that precise job responsibilities vary from company to company and some of these tasks may be carried out by senior operators or by the database administrator, a job function becoming increasingly popular in its own right.

Outside the area of day-to-day operations, the systems programmer provides general technical

advice and support to system development personnel.

Perhaps the most interesting part of the job is the on-going evaluation of new software. Deciding which products are useful and effectively complement a company's computing strategy is one of the more satisfying tasks of the systems programmer.

So what sort of person becomes a systems programmer? Surprisingly, very few people move from applications programming into systems programming. New entrants are usually technically biased graduates, frequently operators or, quite often, people with a technical background in other fields such as science or engineering.

It would be false to suggest that a career in systems programming held considerable prospects in the fields of operations or technical management. However, because systems programming teams tend to be fairly small, career progression in the technical area is limited.

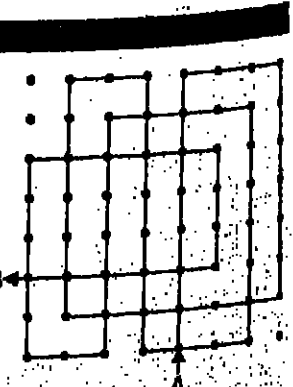
Workplace is compiled by Philip Hunter and Andrew Thomas.

PUZZLER

THIS diagram shows the original answer to a 19th century puzzle, where the task is:

"Travel point-by-point from A to B by the longest possible route, making only 15 right-angle turns and visiting as many points as you can. No part of the path is to be traversed twice (except where a point itself is visited again, but from a different direction)."

The answer covers 76 unit-lengths from A to B, but falls to reach three of the points. Modern analysis has now revealed another 76 unit-length path from A to B, with 15 turns, that does exactly the same job but leaves only one point un-visited.



Can you find this optimum route before turning to page 45 for the solution?

PEOPLE

Westinghouse makes UK manager president

WESTINGHOUSE Management Systems has promoted its former UK manager David Hazlewood to president. He succeeds Eric Lutaud.

Hazlewood has been at Westinghouse for nine years. He joined the company as area manager when it began operating in the UK. The company has 1,000 unit produc-

tion sites in the UK and about 5,000 in Europe. Activities in Europe include major operations in France and Germany and products are marketed extensively in the Middle East.

Hazlewood will be based in the UK, but will spend a good deal of time at the Westinghouse headquarters in Paris.



■ Dieder McAlpin (left) has been appointed branch manager at I.P. Sharp's Dublin branch. She has an accountancy background and joined the company in London in 1976. Her main aim is to introduce the company's timesharing service to the large corporations that have set up shop in Ireland.

■ Solicitor Peter Atkin has been appointed as a main board director at United Leasing. He joined the company in 1978 and became a member of its management committee in 1981.

■ The communications and control division of Philips Business Systems has appointed Bernard Harris sales executive for internal communications.

DIARY

SEPTEMBER 28

The relevance of Ada - a one-day meeting. BCS ACM Chapter, City University. Details Dr Jim Woodcock, GBC Hirst Research Centre, Wembley, Middx. Tel: 01-904 1262 ext 487.

How the error handler works. BCS PL/Group, 3rd Floor, 15-19 Kingsway, London WC2.

SEPTEMBER 29-30

Computer aids to plant operation. Conference, BCS Process Control Group/IMC Teeside branch. Royal Station Hotel, York. Details BCS.

OCTOBER 5

The impact of the new technology on management. Speaker David Fairbairn, director of NCC. IDPM Scottish branch-British Institute of Management. Merchants House, 7 West George Street, Glasgow.

The Talisman Stock Exchange System. BCS North West London Branch, Railway Hotel, Greenford, Middx. 7.45.

OCTOBER 6

Impact of new technology on management - challenges and implications of IT for the workplace. Speaker Ted Cluff, secretary-general IDPM. IDPM Scottish branch - Institute of Management. Lecture Theatre, College of Commerce, Aberdeen.

Introduction to Porth seminar. RCS Microsystems. Osterley Comfort Inn, Isleworth, Middx. Reservations 01-898 3775.

CONFERENCES

■ A seminar aiming to assist managers and planners in dealing with data processing is being held at London's Clifton Hotel from October 18-20. Called Advanced EDP Management Strategies, it is organised by Frost and Sullivan and will examine all levels of data processing organisation and viable measures of actual performance. Emphasis is placed upon exploring proven management ideas and approaches at advanced level. Details on 01-486 8377.

■ THE Cambridge CAD/CAM Practical Experience Centre is running the first of its newly-devised workshops for engineers and managers, starting October 11. They are run by engineers for engineers, and aim to provide objective advice to familiarise industry with the techniques and benefits of CAD/CAM. The workshops are based on real life design and manufacturing jobs borrowed from some of the centre's clients. Details (0223) 631225.

■ Institutions that provide capital for small businesses are likely to receive large numbers of business plans from entrepreneurs seeking capital. Most plans, say Ores International, are so poorly prepared that they stand little chance of at-

The future role of operations. IDPM Birmingham branch. New Imperial Hotel, Temple Street, Birmingham. 7.30.

Mighty micro and super graphics. IDPM Central London branch. Altergo, Imperial House, 15-19 Kingsway, London WC2. 6.00.

Productivity in application development. IDPM Sussex branch. Town Hall, Market Square, Hove. 7.00.

OCTOBER 12

Visit to Thames Valley Police Computer Centre. IDPM West London to Oxford branch. Thames Valley Police Computing Centre, Kidlington, Oxford.

OCTOBER 14

Rigorous software engineering. BCS Software Engineering Group. Large Chemistry Theatre, Birkbeck College, Malet Street, London. 10.30.

OCTOBER 19

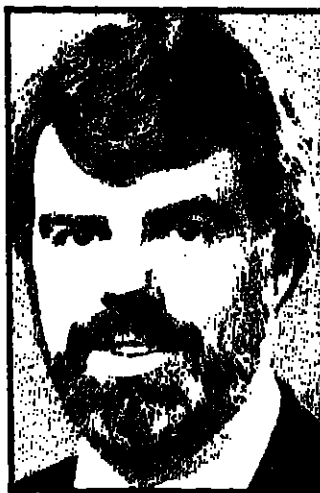
Visit to London Air Traffic Control Centre. BCS North West London Branch. Numbers limited. Contact Frank Rich on 01-864 5311 ext 2359 to reserve place.

OCTOBER 21

Computer privacy and a data protection law. Speaker Pat Hewitt, NCC. BCS London Branch. Charing Cross Hotel, The Strand, London. 6.00.

tracting funds. The company aims to rectify this unhappy state of affairs with a seminar scheduled for October 15 to be held at the Heathrow Hotel. Called An Effective Business Plan for the Smaller High Technology Company, it aims to provide just that. Fee is £125 + VAT. Details and reservations 01-236 4080.

■ The Computer Automation Show will be held at the Waldorf Hotel in London on October 28. Organised by the United Kingdom CAMAC Association, it will include exhibitions and demonstrations by various CAMAC equipment manufacturers including data collection and control, communications capability and microprocessor-based systems. There will also be a series of presentations on various related subjects, including fast programmable controllers, IBE 488 interfaces, software and new measurement and control standards and trends. In addition to the above, the association will also be conducting a series of introductory workshops covering the principles of standards and operations. Admission is free. Details on (0606) 44321.



■ Prime Computer has appointed Bill Griffiths (above) as its new district manager, responsible for non-government business in the South of England. He joined the company as a sales executive four and a half years ago, and went on to become branch manager for the North of England, and later UK marketing program manager.

■ David Sheppard has joined the new Manchester office of Computer Associates as salesman, marking a change in direction for Sheppard who was previously systems engineer with the company.

■ Education Secretary Sir Keith Joseph has formed a visiting committee to advise him on the Open University. Representing the computer business is Dorothy Nelson, who is director of Hatfield Polytechnic's computer centre and a member of the Computer Board.

■ Two newcomers have joined Videcom. Mike Mullany becomes general manager of the newly-formed Videcom Travel Systems. He was previously airline systems sales manager in the marketing division of Cable and Wireless. Chris Albers, formerly business development manager with Children Computer Business Systems, is to set up a Videcom distributor network for the company's Apollo desktop computer.

■ Two consultants have joined Armitage Norton Consultants. They are Robert Cusworth, who was formerly with MLH Consulting Group; and Trevor French, who was previously with Peat, Marwick, Mitchell & Co.

■ Computer systems and software house Moffat Rose has appointed John Collase as head of its Compass Rose marketing division. He was previously marketing director at Leasco.

■ Alex Kachellek, formerly with Sperry Gyroscope, has been appointed production manager at Case.

■ Donald Davidson has been appointed managing director at Irel Software Systems. He joined the company in 1969 as controller-accounting manager and was latterly president of Irel International in London.

■ Former managing director of travel firm Cox and Kings, Jonathan Chapple (below), has joined Hertz Europe as European director of management systems and services. Chapple has written two books on systems and data processing and was formerly vice-chairman of the Travicom Users' Association.



■ Two new directors have been appointed at H&RD (Computing Services), the Birmingham-based systems house. Both Steve Rawlinson and John Smith have been with the company for more than three years and between them have over 25 years' data processing experience.

■ Two salesmen have joined BASF Computers. Richard Hibbert, previously with NCR, will cover sales territory in the North West, Wales and Northern Ireland. Jeremy Lassen, who will sell BASF products to OEMs, was formerly a regional sales manager for Vermont Research.

■ Centronics Data Computer has appointed Alan Pickering as its manager of international accounts. He was previously with the distributed data processing division of Philips where he was responsible for sales and account management to multinational, energy and oil related industries.

■ Paul Grace has been appointed financial director at Atari International UK. He was previously with Rank Xerox where he was financial planning manager.

■ Roland Lewis has been appointed technical development manager at Micro Scope. He was formerly with Spring Grove Services, where he was a project leader.

TRAINING DATES FOR YOUR DIARY

UNIX* and C

As consultants to the training department of the world's largest user of UNIX we are offering the following courses:-

1. UNIX OPERATING SYSTEM (3 day workshop) - HERTFORDSHIRE 18-20 OCTOBER
2. C PROGRAMMING LANGUAGE - LONDON 22-26 NOVEMBER
3. UNIX OPERATING SYSTEM (5 day workshop) - LONDON 29 NOV-3 DEC

STRUCTURED METHODOLOGIES

We offer the following courses on structured techniques based on the De Marco analysis and Constantine/Myers/Yourdon design method.

4. MANAGING SYSTEMS DEVELOPMENT - LONDON 1-2 NOVEMBER
5. REVIEWS, WALKTHROUGHS AND INSPECTIONS - LONDON 3-4 NOVEMBER
6. STRUCTURED ANALYSIS WORKSHOP - LONDON 8-12 NOVEMBER
7. STRUCTURED DESIGN/PROGRAMMING WORKSHOP - LONDON 15-19 NOVEMBER

*UNIX is a trademark of Bell Laboratories

I wish to attend Course No: ☐ Please send me further details ☐

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

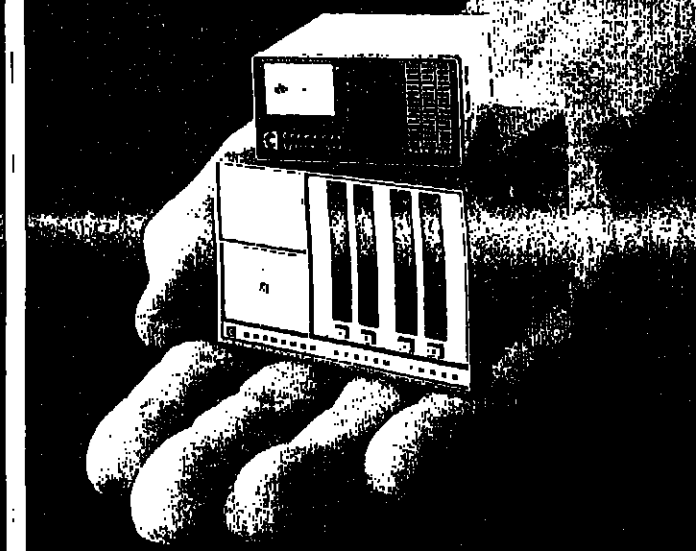
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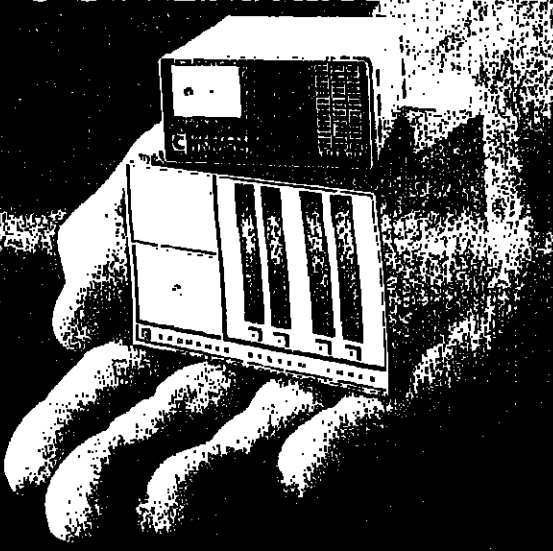
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COMPUTER LITERACY

Jeff Taylor snipes at the BBC Computer Programme

Beeb maps a pilgrim's progress towards materialism

THE BBC television series *The Computer Programme* which made its debut this past spring, will be re-broadcast from mid-October, creating interest for a new series to run from January.

Although its title may prophesy the focus of its January sequel, the BBC Computer Programme is more than just a programme about the BBC computer. It is the public face and least criticised vanguard of the BBC Computer Literacy Project, and the world's first major television experiment in computer literacy. As such, it deserves more careful critical attention than it has received.

Critics are unhappy with the flawless sunrise image of the tech-

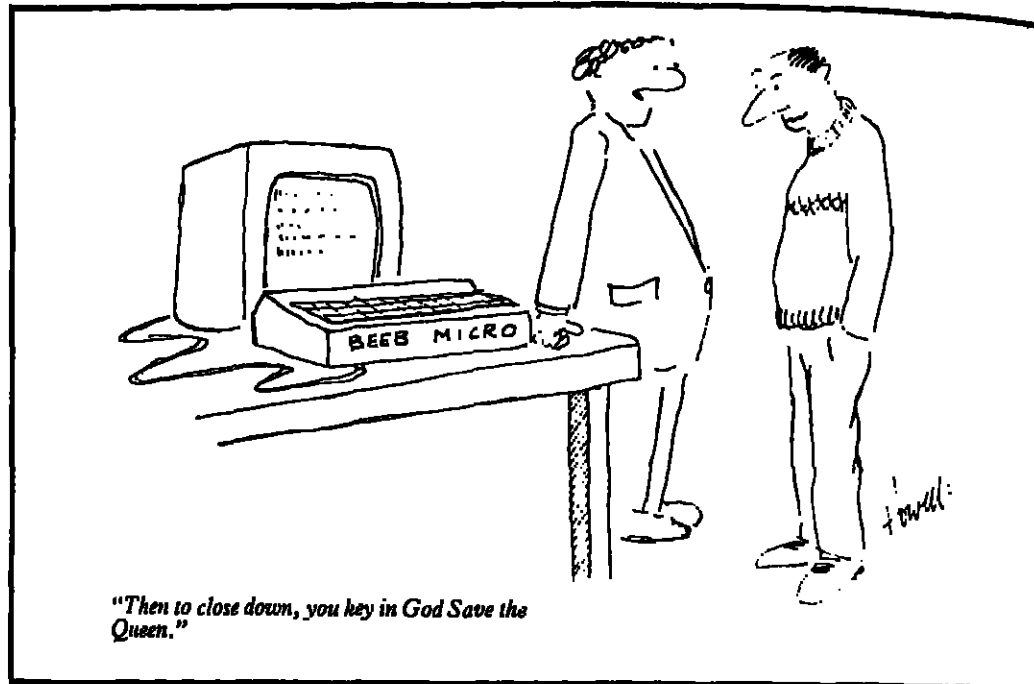
nology and our future with it which they claim the show presents. The image is seen to arise from its factual content, that is, its obsession with problem-free applications and reluctance to deal with negative consequences.

Yet to cite this alleged fault only or mostly as content-based is to disregard McLuhan's dictum that the medium is the message. Camera usage, set design, music, all help to shape the TV message, but here the main medium is twofold: a) the roles of the presenters (their relationships to the technology, to each other and to the viewer), and b) the language which expresses these, since relationships are defined and continually reinforced

by the way language is used in the series. It is at least as much how they talk about IT that conveys an image of this technology as what the presenters talk about.

To quote the BBC: "The style of the series is modelled on *Pilgrim's Progress*, with Chris Serle as the seeker after enlightenment and Ian McNaughton-Davis ('Mac') as his guide." Gill Nevill is always away on location to present the relevant real-world application, and occasionally and briefly, social consequences expert Rex Malik comments on film.

Serle clarifies his and the viewer's role at the outset when he describes "you and me" as "ordinary people", "non-experts", "the



uninitiated" to whom "the world of computers is an unfriendly jungle". Unlike Bunyan's Christian however, this pilgrim progresses towards materialism.

The opening scene finds Serle shopping in the computing section of a hi-tech store ("I'd like to buy a computer") and so too the viewer

is defined as a potential consumer of computers. The scene ends with a close-up of the BBC machine, the advised choice, the "computer that goes with" the show.

The role of Mac is also shown early: "a member of a priesthood" who understands both Stonehenge, "possibly the first silicon chip", as well as the "metal megatons" of today.

As guide, expert and priest, his role is fairly narrow, fact dispenser. Mac is the macho half of the duo, not afraid to get mucky on factory floor or on the land, or to play a chubby cowboy to make a point: "a climber of mountain peaks" and the London Planetarium, who is hooked on military analogies.

As timid novice yet eager devotee, Serle asks questions. As confident expert and priest, Mac supplies answers. These answers often begin with a padding phrase such as "of course", after which Serle, nodding throughout, responds in a hushed, reverent tone: "Right." ("What gear do I need, 'cause there's a terrifically wide range of choice?") "Well, of course you need... and that's the equipment you'd need." "Right."

Both "of course" and "right" serve to punctuate the wisdom of Mac's words. The etiquette of novice and expert, or devotee and priest, is clearly observed and exemplified: Serle (and vicariously the viewer) may question Mac in his thirst for knowledge, but may never question Mac's authority.

When not in his reverent or inquisitive mode, Serle seems in a state of perpetual astonishment, his exclamations reading like a thesaurus of hyperbole: "Wow!"; "Wonderful!"; "Absolutely terrific!"; "As quickly as that!"; "Very good - it works!"; "We can actually do that?"; and on the coast of silicon chips, "Is that all?"

These incantations in the language of advertising all describe the technology and its positive applications. Serle is never in astonishment mode when confronting the few negative social issues the series manages to raise, such as the need for data protection laws. Nor is Serle allowed to interact with social consequences expert Malik as he does with Mac, and this too discourages the viewer from being provoked to interact with these issues.

Serle raises these when introducing Malik, in his evangelical or conversion mode. As an initiate and devotee, it is one of his prime duties to spread the gospel, even if it means occasionally paying lip-service to negative consequences. In this role Serle attempts to convert the viewer and display his own conversion at the same time, which is complete by the final programme when he is no longer inquisitive nor astonished, but a fully pious devotee, reverently testifying faith in "the perfect slave", the computer.

A sign is revealed early on that Serle's conversion is imminent when the obligatory ritual of programming the BBC computer finally pays off. The program works, and Serle achieves a kind of religious ecstasy, which he and Mac describe as "a very good warm feeling", "a sense of grati-

cation and pleasure".

Other experts claim that repeated intoxication through programming and gaming can lead to "computer addiction", but the only warning the show's experts give is not out of concern for the welfare of users, but for the image of computing: when Mac says it is "degrading" to see computers used just for "silly games", we realise his fear is one shared by all priests, blasphemy.

"Our reporter" and token woman Gill Nevill is constrained by a tight script which casts her as an acolyte or minor angel, a presenter of positive applications, a bearer of good tidings. She is not allowed to express authoritative opinions or pose provocative questions about, for instance, the greater unemployment women are likely to experience than men via automation, or the exploitation of existing female labour in the chip industry.

As expert on the consequences of computers to society, in a way where technology, not society, is "in control" (as both Mac and Serle insist), Rex Malik plays a lesser role than hi-tech priest Mac, operating as a conveniently myopic seer.

Serle asks "Where does he (Malik) think it (IT) is leading us?" Malik strops maniacally pecking away at his pre-electric typewriter and blandly predicts: "It's leading us to major change."

Malik, who resembles a thick-spectacled Peter Lorre, speaks in bullet-spitting staccato sentences, like a Chandler or Hammett tough guy telling it like it is: "The question is not 'Do computers have social consequences?'. It is 'What are the social consequences of computers? What are the issues that are raised?'"

But does it take an expert to ask such simplistic questions? Only if he can make them sound more expert than they really are. That is the answer.

By the final programme this answer has been confirmed. Although Serle (in conversion mode) tries to make us believe that the series "has looked at how computers are going to affect virtually every aspect of our day-to-day lives", it is almost exclusively the benign aspects that have been explored.

One would like to have seen the presenters meet in person on equal terms at the end of each show to discuss candidly the social consequences raised, with experts being seen to differ, and with novices shown to be brave enough to question intimidating expertise.

Is *The Computer Programme* a style be converted to portraying a more realistic image of the technology through the next series? If so, it will take more than careful attention to balancing content.

If the presenters convey an idealised image of this technology, then it is the language that tries to testify it is divine, in a "world of information science" in which "like perfect slaves" play God.

O ye of little faith: ARISHI
Jeff Taylor is a researcher in the science department of the University of London Institute of Education.

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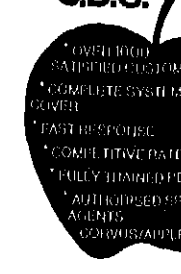
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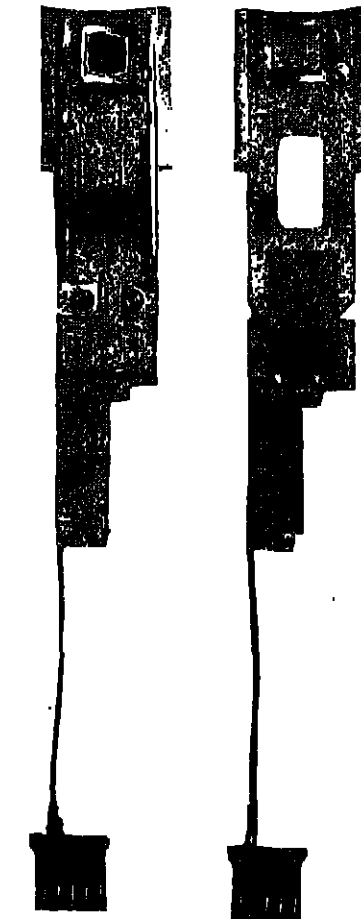
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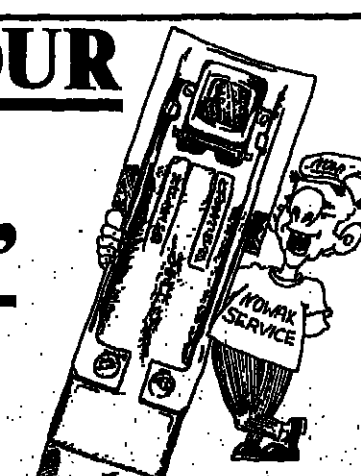
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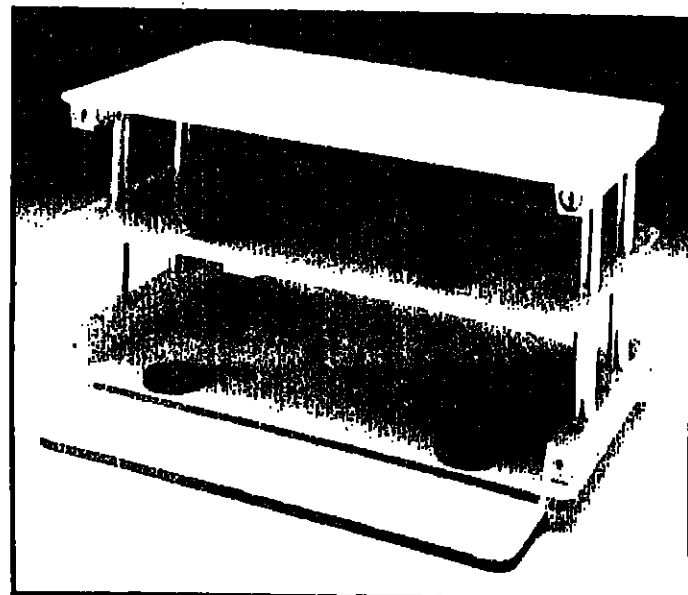
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The Anchor Pad Security Rack keeps the scrampers at bay.

Stop that Apple thief!

IF you are worried about anyone making off with your Apple you will be interested in the Anchor Pad Security Rack from Data Design Techniques. It is specifically designed to secure an Apple II system comprising CPU and keyboard, twin floppy discs and monitor in its normal operating position.

Anchor Pad systems deter theft by "anchoring" equipment to a desk or similar working surface. Unlike most immobilising systems the Anchor Pad does not rely on a bolting-type device; apart from ruining the furniture, the maker of Anchor Pad considers such devices are far too easily defeated.

Anchor Pad uses an adhesive pad integral with a metal base-plate which is "glued" to the working surface with a minimum force of 50lbs per square inch. A

matting casting bolts to the chassis of the equipment to be secured and this casting is married to the base-plate using steel rods which can only be extracted by a special tool. As a final precaution the rods themselves are further protected by numbered key-locks.

The Apple II version comprises a three-stage rack assembly with each component of the Apple II secured individually within the rack. The complete assembly can be rotated through 360 degrees for operator convenience, and any item can be unlocked for servicing. The open rack system ensures adequate ventilation for each Apple II system component.

Data Design Techniques (CW), 68/70 Tewin Road, Welwyn Garden City, Herts AL7 1BD. Tel: Welwyn Garden 34774.

Plug compatible disc drive can save space

CENTURY Data Systems has launched a 300 Mbyte, SMD-compatible Winchester emulation for Control Data's 9766 removable pack drive.

Designated the AMS 315 (Advanced Markman Series), the new drive is one-third the size of comparable 3330 technology pack drives with the same capacity. This allows the user an option of packaging three times the amount of storage in the same physical space, says the supplier.

The AMS 315 is plug compatible with CDC's 9766 removable pack drive, Ampex's 9300A, and

Century Data's Trident T302 and T305. This compatibility provides significant time and cost savings to the OEM by allowing immediate integration of Winchester technology with no system hardware or software modification, says Century.

The AMS 315 has an MTBF (mean time between failures) in excess of 10,000 hours, which is 2½ times greater than comparable removable pack drives.

Century Data Systems (CW), AMD House, Goldsworthy Road, Woking, Surrey. Tel: (04962) 27272.

Tektronix users can save by local programming

TEKTRONIX has introduced a local programmability package for its 4110 Series of intelligent computer display terminals. Providing direct, local access to the terminal's graphics features, the local programmability facility saves host computer connection costs and frees the user from the long response times often found in large time-sharing systems.

The Tektronix local-programmability package supplies all the elements required to write, edit, compile, link, debug, and run programs locally; to access all the graphic and alphanumeric features resident in the 4110 Series firmware; and to control all peripherals, such as plotters, printer, graphic tablets, and mass storage devices, which may be connected to the terminal.

The package consists of a disc-based operating system, a Fortran-86 compiler, utility programs, a library of low-level interface subroutines, and an Intel 8087 numeric processor. A local version of Tektronix's Interactive Graphics Library is also available.

All 4110 Series terminals are easily upgraded to local programmability. The recommended

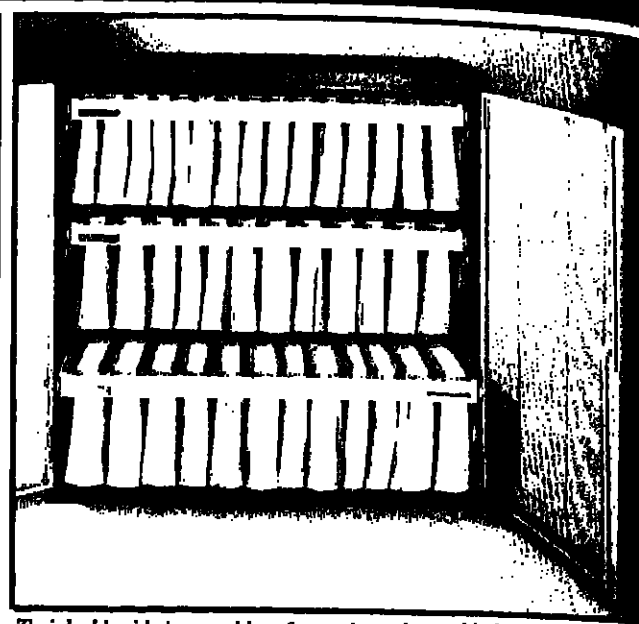
system configuration includes a minimum of 256 Kbytes of RAM. The user can expand local memory up to a maximum of 800 Kbytes on the 4114 and 4113, and up to a total of 672 Kbytes on the 4112.

For mass storage of system and application programs, the terminal needs either two flexible disc drives or one flexible disc drive and one miniature hard disc drive. Each eight-inch flexible disc provides up to 630 Kbytes of file storage and the hard disc can store up to 10 Mbytes of data.

Local programmability delivers increased productivity by applying the benefits of distributed processing to graphics applications. The user has the flexibility to run entire programs locally, or to connect the terminal to a host system for more complex tasks.

While many applications, at least in part, require the number-crunching and database management capabilities of a mainframe computer, the terminal can still be used on a standalone basis for the pre-processing and post-processing of graphics information.

Tektronix (CW), Beaverton House, PO Box 69, Harpenden, Herts. Tel: Harpenden 63141.



Twinlock's side issue cabinet for storing printout binders.

A place for printout

TWINLOCK has launched a side issue cabinet for storage of computer printout binders. Based on the established Multi-Stor range of cupboards, the side issue cabinet is finished in chocolate and cream colour scheme.

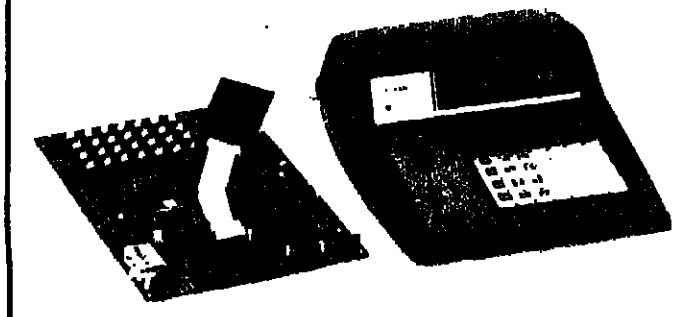
The side issue cabinet can accommodate computer printout with a drop of up to 12 inches, while the roll-out filing chassis are supplied complete with an adjustable filing rail able to take printout binders of most widths up to 15½ inches. Three roll-out chassis are accommodated within a height of

just over four feet, and incorporate an anti-tilt mechanism that prevents more than one disc from being pulled out at the same time.

Two conventional steel doors are used for reliability and durability, and the cabinet has a wipe clean finish.

The side issue cabinet costs £275. It is 48½ inches high, 21 inches wide and 15½ inches deep.

Twinlock (CW), 36 Croydon Road, Bechtelham, Kent ME4 4BH. Tel: 01-650 4818.



GP's microprocessor controlled EPROM programmer/emulator.

EPROM programmer

A MICROPROCESSOR controlled EPROM programmer/emulator, which at £545 is claimed to be half the price of any comparable equipment currently available, has been launched by GP Industrial Electronics.

Called the EP4000, the unit has been designed to be simple to operate, extremely reliable, and will program and emulate all the

popular NMOS EPROM according to the full manufacturers' specifications.

Personality cards and hardware changes are not usually required by the EP4000.

GP Industrial Electronics (CW), Unit E, Huxley Close, Newnham Industrial Estate, Plymouth PL7 4JN. Tel: (0752) 332961.

GCS adds to Telex comms product range

FOUR NEW Telex products complement the existing range of IBM SNA and BSC plug-compatible terminals, controllers and printers supplied by General Computer Systems.

Each product continues the Telex philosophy of 100% plug compatibility within an IBM supplied network and according to GCS provides more features for less money than an IBM equivalent.

Telex product development intentions are illustrated in the 476 terminal which has no direct equivalent within the IBM range, but achieves around a 25% price advantage over an IBM alternative. The Telex 476 emulates an IBM 3276 and is claimed to be particularly cost-effective for remote locations requiring up to three or four devices where, previously, users

had to install a more expensive 3276, 3274 or equivalent. Telex 178, an IBM 3274 compatible device meets the needs of Executive users requiring a smaller sized terminal. It has a 12 inch screen with identical performance to that of the existing inch Telex 278.02.

Telex 174 is a new controller supporting eight A-coax devices. BSC, SNA, both, separately addressable, featuring switch selection control, is plug compatible with the IBM 3274 controller.

The Telex 287D 150 character per second bi-directional matrix printer is claimed to be one of the most cost effective plug compatible printers available. General Computer Systems (CW), Orion Park, 216-218 Northfield Avenue, London W11

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SYSTEMS ANALYST/PROGRAMMERS

A new IBM installation, a 4331-2, with 4 meg, is being installed by our client on the South Coast to replace an ICL machine. The computer department is to be expanded, existing staff are being retained and a large program of conversion and completely new systems development is to be tackled. Immediate plans include a significant expansion of the on-line network and the introduction of Word Processing and Personal Computing. Under VM, the machine will utilise DOS/VSE and CMS. The on-line network will use CICS and DL/I. The database. Main programming languages are COBOL and APL (with ADI and ADRS).

The new people recruited will have IBM experience and in addition to the salaries quoted, the following benefits apply

- Assistance with relocation, if necessary
- Generous holidays
- Flexitime
- Pay award imminent

Principal Analyst/Programmer to £10,250

This position carries the responsibility for project leadership, controlling a team of analyst/programmers. Applicants must have at least five years' systems development experience, two of which must have been in a senior capacity, and have practical experience of all aspects of systems development. A thorough knowledge of COBOL is essential to this post; whilst experience, relevant IBM software, personal computing languages and/or DL/I would be an advantage.

Analyst/Programmers to £9,500

Salaries will be paid according to experience, which should have been gained in an IBM environment. Ideally, we are looking for Analyst/Programmers with a minimum of two years' experience of

systems development, including a thorough knowledge of COBOL. Experience of relevant personal computing languages and/or DL/I would be an advantage.

Analyst/Programmers (contract) to £9,500

We require three Analyst/Programmers for a period of two years' to supplement our normal establishment, to assist in our ambitious development workload. Contracts will be available for one or two years according to preference. Salaries will be commensurate with experience, and within the range shown. A thorough knowledge of COBOL is essential and experience of Systems Analysis and Design would be an advantage.

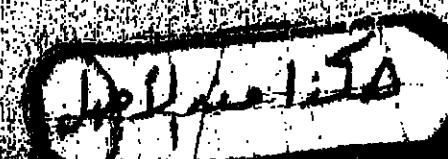
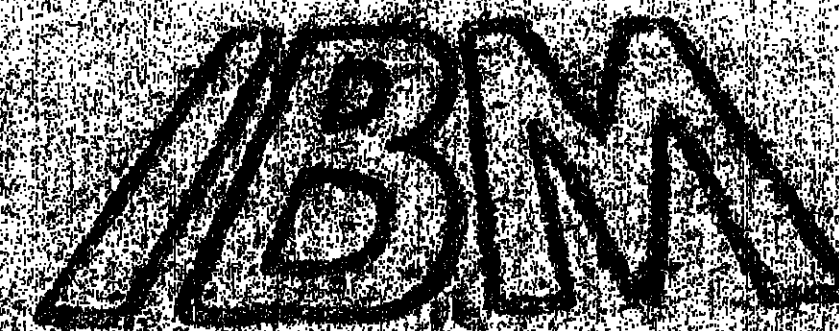
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DAVID WITTY
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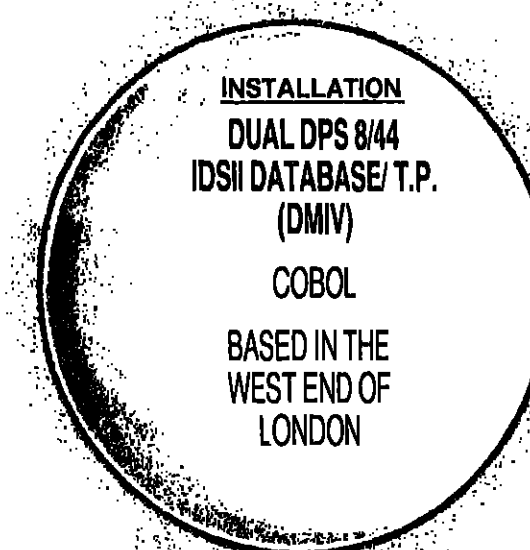
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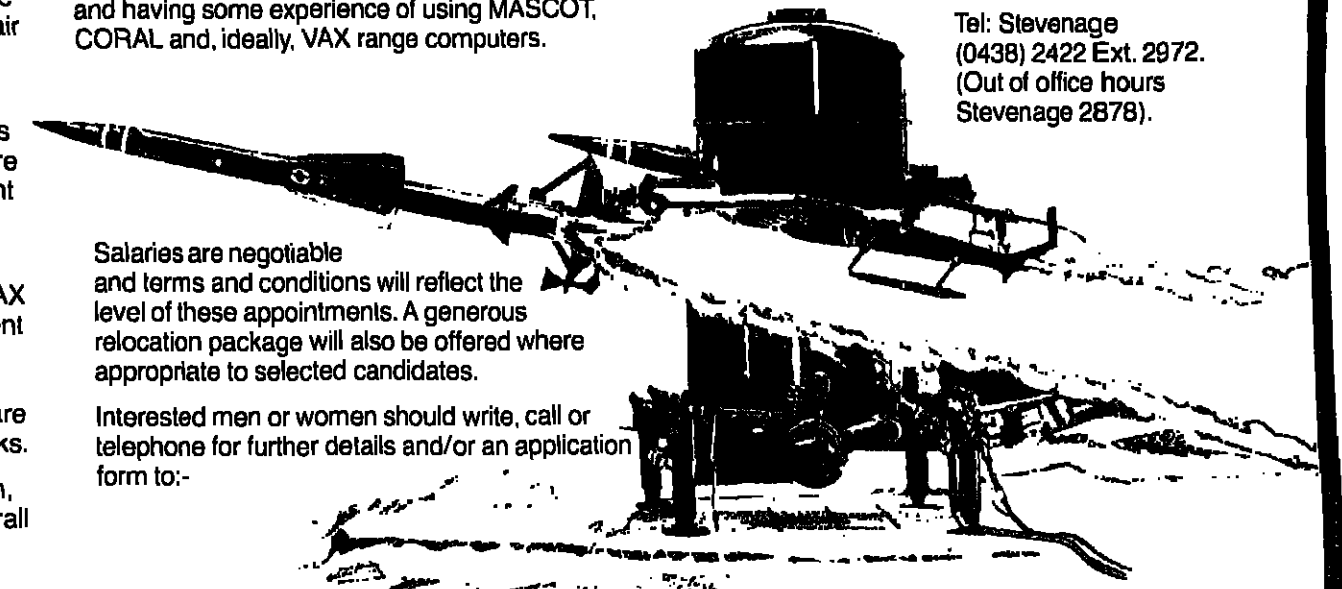
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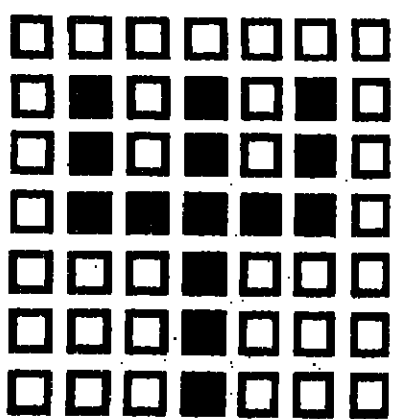
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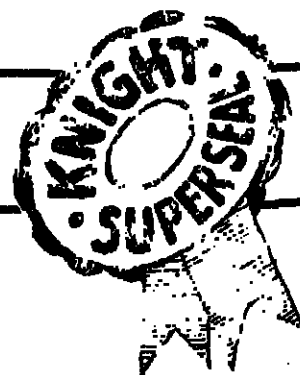
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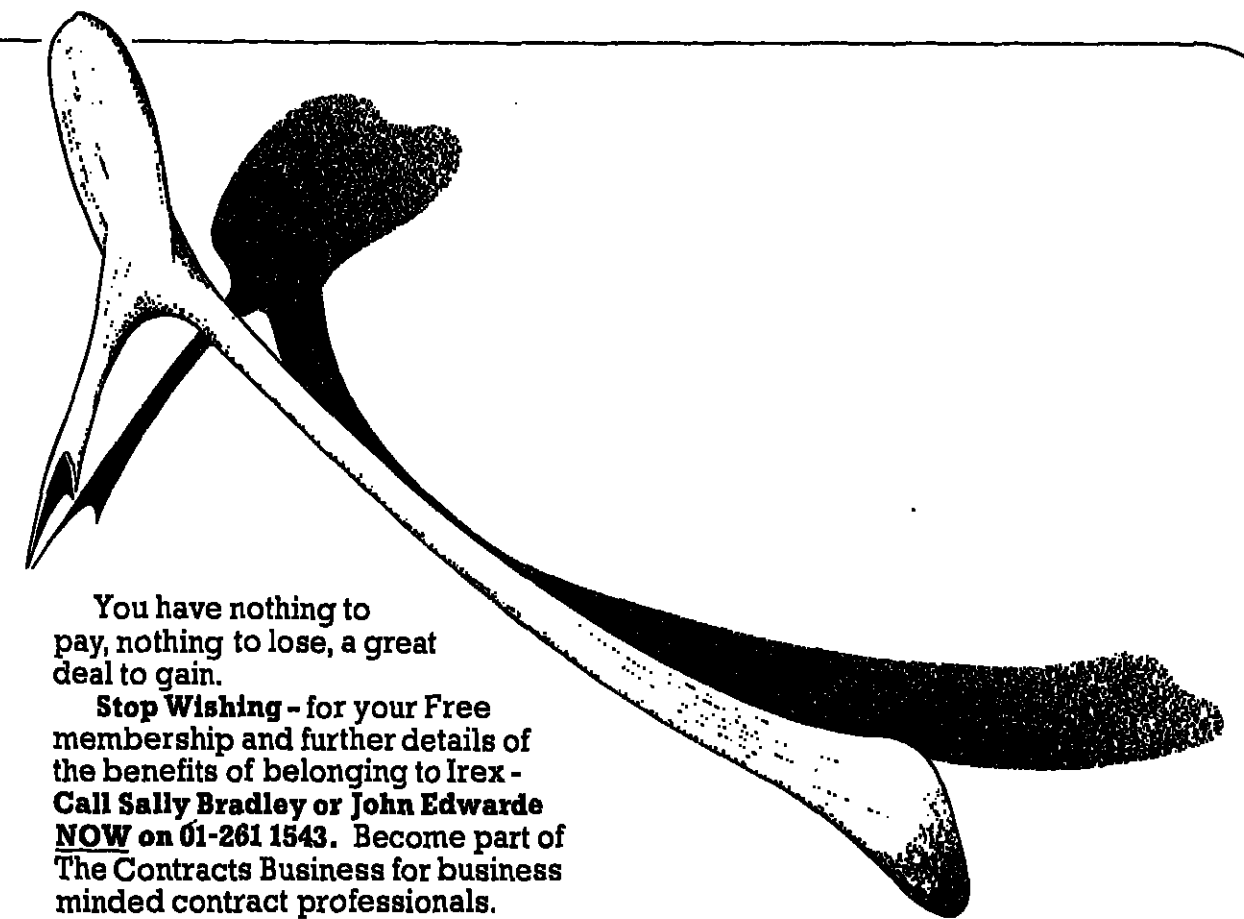
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Bucks: Salaries to £10K+

Systems Programmer, with substantial experience of micro-based systems, are required by a leading supplier of computer controlled machinery. Suitable applicants will be graduates in a scientific subject, preferably Electrical or Electronic Engineering, followed by two years in an industrial environment. At least three years' experience gained on a 16-bit micro-processor is essential, with a preference for those who have

used Texas Instruments 9900. Fluency in a high-level, block structured language, preferably Pascal, is a prime requirement, with knowledge of an assembler and an understanding of basic micro-processor hardware being useful supplementary skills. Respondents with either supervisory abilities or, alternatively, a background which encompasses manufacturing industry will be particularly welcome. Ref: L/30/D

Jnr. Macro-11 Progs.

E.E.C.: Pkg. to £12K

A number of Macro-11 Programmers, willing to relocate overseas for a minimum of 12 months, are required to join the Italian and German offices of a leading British Systems and Software House. Suitable applicants will be graduates with a minimum of 12 months' real-time programming on a PDP-11 configuration running under RSK 11.M. Fluency in Macro 11 is, of course, essential, but candidates able to offer additional skills in Fortran or Pascal are particularly encouraged to apply. Applications experience should, ideally, have been gained in a data communications or process control environment. Ref: L/20/A

Senior Systems Designers

N. Home Counties: Salaries to £13K

A number of Senior Systems Designers are urgently required for the Advanced Systems Division of a well-established minicomputer manufacturer. At least one degree in a computer-related discipline followed by five years' direct involvement with systems software development, preferably gained with a leading software house, is essential. A major area of responsibility will be to provide de-

sign consultancy services across a wide number of projects and ensure that performance, functional and quality criteria are achieved. Therefore, good communications skills and high creative ability are very important as is a software background encompassing compiler development, communications systems and block-structured languages. Ref: L/32/A

Telecomms Consultants

Greater London: Salaries to £17K

A highly regarded supplier of integrated Data and Telecommunications Systems wishes to recruit a number of Designers and Senior Consultants. Ideally, candidates should have had experience in the evaluation, selection and integration of PBX/LAN equipment or be currently employed as a Consultant with a Systems House or Product Vendor. All respondents must show previous experience of both man-man-

agement and budgetary control. Additionally you will be called upon to provide a total consultancy service from strategic studies, through to recommendations, on-site implementation and final acceptance. Good personal presentation skills are of paramount importance since you will be expected to project recommendations at senior management level. Ref: L/32/C

UNIX Specialists

Inner London: Salaries to £12K

An internationally recognised supplier of Turnkey Systems has recently introduced a new range of products based around the UNIX operating system. The company now has a requirement for a number of additional UNIX-orientated Consultants and Design Specialists within its Central London facility. Suitable respondents should hold a numerate degree and be fully familiar with not only

UNIX but also C, Pascal and on Assembler language. Of additional interest will be those who are currently involved in the development of a system based around a 16- or 32-bit microprocessor. The majority of development work will take place in Central London. However, a degree of mobility is essential for client visits. Ref: L/31/E

Pascal Programmers

N. Home Counties: Salaries to £10K

The Research and Development division of a leading multinational corporation requires a number of Programmers to assist in the development of a system based around a 16- or 32-bit microprocessor. The majority of development work will take place in Central London. However, a degree of mobility is essential for client visits. Ref: L/31/E

experience on either Intel 8080/5 or Z80 based systems, preferably running under CPM or UNIX is essential as is fluency in Pascal. A knowledge of prototyping techniques and an Assembler language are useful supplementary skills and will attract a salary premium. Ref: L/22/D

Database & T.P. Consultants

London/Berkshire: Salaries to £16K

An internationally renowned supplier of Database, Teleprocessing and Financial Management Systems is currently seeking additional Consultants to be based in either the Company's Headquarters in Central London or their regional office in Berkshire. Suitable applicants should offer a minimum of five years' Data Processing experience, preferably gained in an IBM mainframe environment. It is essential for all positions that you offer current on-line skills, e.g. CICS, ENVRON or SHADOX and you should have an in-depth knowledge of an IBM compatible DBMS. Career prospects are excellent and there will be opportunities for applicants who wish to specialise in database design, administration or analysis. Ref: L/31/H

Ref: L/31/H

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1014

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For more details of this position, please telephone or write to Andrew Cousins. Initial interviews will be held in Central London.



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Systems Analyst – To £12k

We are looking for a Systems Analyst, with a programming background and three to five years experience in data processing. You should have had involvement in broking systems and worked on business analysis and systems design in an IBM environment. You will be a member of a small team developing new applications, such as accounting, risk administration and word processing systems. Based in London this position offers an interesting future to the right candidate.

Programmers – To £11k

COBOL/CICS – Two years IBM DOS/VSE experience opens up some interesting opportunities to work on insurance and accounting systems. You should have a sound background in either Cobol or PL/I and one years involvement with CICS to take a development role on these integrated data/text systems. Based on the Surrey/Hants Border.

DPCX – A new system using 8100 DPCX/DOSF technology, combined with CICS and VSAM is currently being developed. To be involved you should have a practical knowledge of 8100 DPCX macro assembler gained over one year. Based on the Surrey/Hants Border.

Systems Programmer – £12k

This position requires a minimum of one years experience of Systems Programming in a DOS/VSE environment. The hardware consists of an IBM 4331 which will be upgraded to 4341 under VM, DOS/VSE early next year. IBM 8100's are linked to the mainframe using CICS/VS, ACF/VTAM, ACF/NCP and DPCX.

You will join a team of two, and play a leading role in installing and supporting VM and DOS/VSE. Additionally, you will take part in the continuing development of the SNA network. Based on the Surrey/Hants Border, you will be at the heart of technical advancement.

For a detailed profile of the company and further information on these opportunities, please contact Francesca Drinkwater or return the coupon below.



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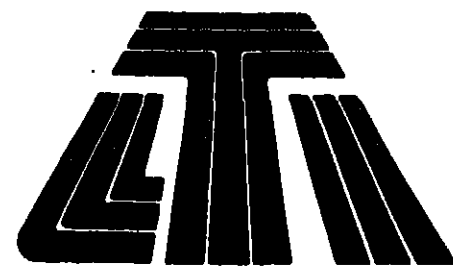
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Technical Support Manager City to £15k
 Reporting to the Technical Services Manager. Minimum of 3 years DOS systems programming experience required. Candidates should be currently involved in developing and maintaining both systems software and applications. This could be your chance to step up with a generous salary, coupled with good benefits. REF: S146

Software specialist Honeywell Level 6/DPS6 Berks to £15k
 Do you have experience of TPS and GCOS and an excellent ability with all low level aspects of LEVEL/DPS6? If the answer is yes then this will certainly be of interest to you! It is a position of great challenge and responsibility within a large DP Department. REF: N3

Systems Programmer DEC/PDP Surrey to £15k
 If you like involvement in diverse and exciting applications, both commercial and scientific coupled with a diverse user base, then you may be suited to this position. Our client is a large Software Service Organisation offering excellent financial rewards and job satisfaction. A solid applications and technical background will certainly be an advantage. REF: N4

Analyst/Programmers Central London £ Neg
 Two vacancies exist within this large Oil Company for people with first class user capabilities and solid COBOL upbringing. As you would expect this company can offer first class technical training facilities in addition to an excellent salary. REF: S176

ICL Programmers City to £12k
 Our client is a city based international company, who are involved in perennial expansion. They need good COBOL Programmers with a minimum of 18 months to 5 years experience to join their technically advanced DP Team. The prospects for in House training and progression toward analyst coupled with good company benefits makes this company a very attractive prospect. REF: F183

NCR Programmers Central London £9-11k
 Help write a page in the success story of this large manufacturer. Currently they need people with a minimum of three years commercial experience – with COBOL and MEAT VS. The work is demanding and challenging, and the benefits to be had are first class. They include interest free season ticket loan, subsidised restaurant as well as top salary. REF: F119

Senior Programmers Herts to £12k
 A successful commercial establishment housing IBM mainframes under MVS, with on-line and database, has requirements for Senior COBOL programmers contributing to a major development of accounting, budgeting and industrial services systems, and willing to help with maintenance where appropriate. Benefits include: lunch allowance, life assurance and a health scheme. REF: A223

IBM Programmers DOS/VSE Essex c£11k
 Based in Essex, near London you will be working either with ASSEMBLER or COBOL in insurance applications, although a financial background is not essential. Joining an existing team, you will play an important part in their development work over the next few years. Database and on-line systems experience would be an advantage. Generous benefits are offered and relocation costs where appropriate. REF: A241

Assembler Programmer/Analyst Surrey to £15k
 If you wish to work in a dynamic environment and be rewarded by a well-above-market salary, coupled with plenty of job satisfaction, then this is for you! CIMS/VSAM/MVS and CICS experience would be an advantage. REF: L421

Programmer RPG/111 Surrey to £11.5k
 A large and prestigious organisation based in the countryside, is looking for solid RPG people with at least two years on-line programming experience. Keenness and the desire to develop perhaps non-existent analysis and RPG 111 programming skills will be rewarded, with the best of working environments. A good salary is offered and all of the benefits attributed to being part of an organisation of this kind. REF: N2

Programmer Basic+ City to £11k
 Large International Banking organisation needs good programmers to be part of their expanding and dynamic development team. A minimum of 2 years experience using BASIC+ in a DEC PDP environment will earn you an excellent salary as well as all of the usual banking benefits, including mortgage facilities where appropriate. REF: N1

Analyst Kent c. £10k
 Become a key element in the continued expansion of this large company. If you have 2-3 years solid design experience, then in addition to a good basic salary we can offer outstanding benefits, including a 5% mortgage where appropriate, free medical insurance and flexible working time. REF: F182

COBOL Analyst Programmer City £9k-10k
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Systems Analyst City to £13k
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IBM COBOL Programmers Surrey up to £11k
 Established insurance company require COBOL programmers with 2 years experience to work on financial projects. As well as a first class salary, this company offers sound career paths and training in CICS and Database techniques. REF: S213

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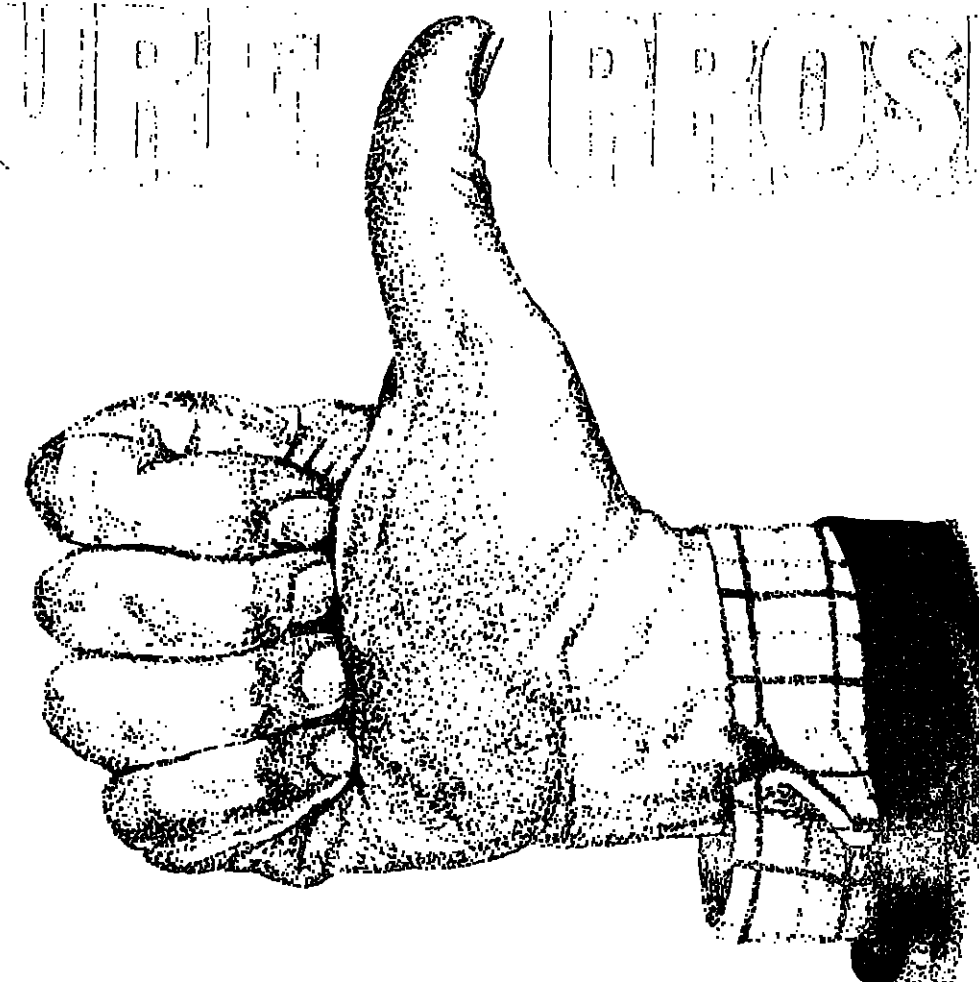
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CITY TEAM LEADER £12,500

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A leading city insurance company urgently requires two Systems Analysts with between 1 and 3 years' formal Analysis experience and an ICL COBOL programming background. These are excellent opportunities in a long term development situation attracting a full range of Company Benefits as well as negotiable basic salary.

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An International Banking organisation has several vacancies for Programmers with 2 to 3 years' COBOL experience gained in a CICS environment. They are utilizing IBM 4341's locally, linked to larger IBM mainframes off-site. The work involves a cross-section of Banking applications and offers every opportunity to progress quickly through a definite career structure. The basic salary is greatly enhanced by a full Banking benefits package.

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LONDON & H COUNTIES PROGRAMMERS AND ANALYST/PROGRAMMERS

We are currently dealing with a number of highly successful SOFTWARE HOUSES, who need to recruit experienced RPG II or III programmers. The companies concerned deal mainly with the FINANCIAL and COMMERCIAL sectors, but there is also interest in people with MANUFACTURING backgrounds. IBM SYSTEM 34 or 38 experience would be useful, but any machine RPG II would be considered, as re-training is usually provided where necessary. Salary levels are very high and career prospects are excellent for these positions.

S3666

S W LONDON SENIOR ANALYST/PROGRAMMER £12,000

This MANUFACTURING company is looking to recruit a SENIOR ANALYST/PROGRAMMER with experience of RPG II or RPG III gained in an IBM GSD environment. The company are currently utilizing an IBM SYSTEM 34 and will shortly take delivery of a SYSTEM 38. The successful candidate will have worked with manufacturing applications and will have experience of new manufacturing package MAAPICS. He or she will be involved in the development of new systems and will receive an attractive salary with benefits.

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CONTRACTS

PDP MUMPS
PDP CORAL 66
PDP RSX11M FORTRAN ASSEMBLER
DEC VAX VMS COBOL
INTEL 80/86 ASSEMBLER
UNIVAC 1100 COBOL
ICL VMEB IDMS
ICL IDMS
ICL SYSTEM 10/25 ASSEMBLER
H.P. 3000 COBOL
HONEYWELL DPS 8

NETWORK CONTROLLER
PROGRAMMERS
ANALYST PROGRAMMER
PROGRAMMERS
ANALYST PROGRAMMER
PROGRAMMERS
DESIGNERS
ANALYST PROGRAMMERS
PROGRAMMER
PROGRAMMERS

IBM MVS COBOL CICS DL/I
IBM DOS COBOL CICS DL/I
IBM MVS VM/CMS PL/I JSP
IBM DOS PL/I CICS DL/I
IBM SYSTEM 38 RPG II
IBM SYSTEM 34 COBOL
IBM 52/80 DE/RPG
IBM 8100 DPCX ASSEMBLER
IBM DOS/VSE RPG II
IBM DOS ASSEMBLER
IBM IMS

PROGRAMMERS
PROGRAMMERS
PROGRAMMERS
ANALYST PROGRAMMER
PROGRAMMER
PROGRAMMERS
PROGRAMMER
PROGRAMMER
PROGRAMMER
ANALYST/DBA

PERMANENT SYSTEMS AND PROGRAMMING

RPG III/II UK to £17,000 + Car
An International Finance Corporation are currently recruiting Systems and Programming Staff at various levels for their System 38 installation throughout the UK. A particularly urgent requirement is for a Computer Manager based in Surrey. Vacancies exist for RPG III and well-versed RPG II Analyst/Programmer and Programmers. An extremely competitive range of salaries are available along with generous benefits including company car at managerial level. Ref. N5484

Programmers London £8,000-£10,000
A leading international company currently require COBOL programmers. Based in West London applicants should have a minimum of two years' solid IBM COBOL experience either from a DOS or OS environment. Successful applicants will enjoy a generous salary and fast-moving career prospects. Ref. N5482

SNR System Analysts London to £13,000 AN/Progs.

A city-based company presently require Senior Systems Analysts and Analyst/Programmers to work on new development projects. Supervisory exp. would be advantageous as successor candidates will quickly move into a team leading capacity. Solid COBOL exp. is essential and a knowledge of CICS would be advantageous. Ref. N5445

SNR Programmer Middx £9,500
Based in Middlesex with easy access from West London and the surrounding areas this company who are involved in the retail industry are looking for a senior programmer. The candidate should have two years-plus COBOL gained in an IBM environment. Any on-line experience is helpful, however this is an excellent opportunity to train in the use of CICS. Ref. S5206

Analyst/Programmer City £14,000 + Benefits
This division of a leading merchant bank based in the City require an analyst/programmer with COBOL CICS and preferably DLI database experience. This is an excellent opportunity for candidates with CICS to move into banking. A programmer with 18 months-plus IBM COBOL experience is also required. The usual banking benefits apply including a subsidised mortgage. Ref. S5119

Analysts and Programmers London Dep. on Exp.
A progressive consultancy based in London are looking for programmers and analysts to work at various levels. They are particularly interested in people with any of the following: PL1, COBOL, MARK IV, DATABUS, CICS, DLI, IMS, DB/DC or WANG VS experience. Salaries are generous and career progression is good. Ref. S5468

**01-437 5994 24hr
DATAPOWER**

Employment/Business Agency
Suite 504, 5th Floor, Triumph Hse, 189 Regent St, London W1
01-450 2602 or 286 9417 (Evening)

**LOOK
FORWARD TO
A DP Development to meet
the needs of the 1990's**

IBM OPERATIONS SUPPORT

CROYDON c£9,500 + benefits

The NLA Tower in Croydon is the home of Hill Samuel Life Assurance, a member of the famous Hill Samuel Group. HSLA is about to expand its computing power significantly, to cater for the corporate systems needs into the 1990's. Hardware will be dramatically increased to a triple processor 4300 installation and plans to house it focus upon a brand new underground computer building. The installation uses a wide variety of IBM software including VM/CMS, OS/VS1, MVS, DOS/VSE and CICS.

The immediate requirement is for a first class production controller with the ability to foresee potential problems within production systems and neutralise them before they occur.

Experience must include liaison with users, including systems development, the creation and maintenance of OS or MVS JCL and the investigation and correction of application systems failures. Previous exposure to VSAM, VM/CMS or operational analysis would be an additional bonus.

HSLA offers a competitive salary plus a valuable benefits package which includes non-contributory pension scheme, productivity bonus, mortgage subsidy scheme and flexitime. For further information please contact Pat Barnes (24 hr answering service) quoting ref: CVW119

**CAPP
ASSOCIATES**
01-886 9693

Computer and Professional Personnel Consultants

Capp House, 96d South End,
Croydon CR9 3SD.

Senior Computer Operator

£6,719 p.a. including S.A. under review for 1st October
Southampton

We operate a Burroughs 6900 working a two shift system covering 08.00 - 24.00 hours. We process a variety of batch, DATABASE, on-line and International Transmission System.

Currently we have a Senior Operator vacancy and if such a post appeals to you and you have already obtained at least two years' large system experience preferably with Burroughs' equipment, we should be interested to hear from you. Alternatively if you have less experience than this but on a large-medium system and you find this type of position challenging we should also like to hear from you.

A.C.T. Services Ltd., operates worldwide through Container Services on behalf of five major shipping lines and is based in Southampton. Where appropriate we will pay relocation expenses. In addition to the above salary we offer the usual large company fringe benefits.

For further information and an application form, please write or telephone (reversing the charges if you wish) to: Mrs. L. Lisney, Assistant Personnel Officer, A.C.T. Services Ltd., Richmond House, Terminus Terrace, Southampton. Tel: (0703) 34433 ext. 3305.

PUBLIC SECTOR JOBS

Computer Auditor

£10,590-£11,751 based in Reading

Computer audit specialist is required to join a small team within the Internal Audit Section. The team will be concentrating on the review of new applications, currently implemented on a Region-wide network of PRIME computers, and the development of a comprehensive library of audit software to run on these machines. The work will also involve the operation and security of the Authority's other installations, twin IBM 4341s which support a large teleprocessing network, and a dual ICL 2980 providing a bureau service to the Authority. Candidates will be expected to be experienced computer analysts/programmers or qualified accountants with a sound practical knowledge of computing. An understanding of the role of Internal Audit together with the ability to criticise constructively and communicate effectively are considered essential. The post involves some travelling within the Region and applicants should hold a current driving licence. Benefits include a superannuation scheme, generous holidays, flexible working hours, staff canteen, good social and sporting facilities. Applications, giving full details of qualifications and experience, together with the names of two referees, should be submitted to The Regional Manager - Mangrove, Nugent House, Western Road, Reading, RG1 8BB, by 8 October. Or phone Derek Dunn on 0734 583337 for an informal talk.

Thames Water
(1010)

UNIVERSITY OF ESSEX
TEMPORARY LECTURER
In the Department of Computer Science

Applications are invited for a Temporary Lectureship for one year from 1 October 1982. Salary will be in the range £6,378-£11,106. The person appointed will assist in the teaching of computer science and microprocessor systems. Assistance is required in teaching and/or in research into methods of teaching modern computer architecture at first-year level. Applications are particularly sought from candidates with practical experience of computer hardware and an interest in developing new software and hardware tools for teaching computer architecture and logic design, but consideration will also be given to candidates with experience in other aspects of computer systems. Applicants should have a good first degree in Computer Science, Electrical Engineering or a related subject. Applications (3 copies) including a curriculum vitae and the names and addresses of 2 referees should reach the Registrar (AD/142/CW), University of Essex, Wivenhoe Park, Colchester CO4 3SQ, by 14 October. For further details please telephone 0206 982288 and ask for Dr. Standerford (extension 239).

DAVENTRY DISTRICT COUNCIL
COMPUTER OPERATOR
TREASURER'S DEPARTMENT

Grade AP1 £5,882-£6,333 (Spinal Column Points 19-23)
Applications are invited for the position of Computer Operator in the Treasurer's Department. The Council uses at present an ICL 7503 Terminal, soon to be replaced by an ICL DR550. An ICL 7502 Interactive Terminal with VDU is already in use. The operator will be required to operate the equipment and to work in conjunction with the Punch Tape Operator on some desktop input. Additionally the Operator will be encouraged to undertake local programming for the DRS Terminal and Code input equipment. Applications may be obtained by telephoning Daventry 11105 extension 208 and should be returned to the undersigned not later than the first post Monday, 4th October, 1982. R.C. HUTCHINSON
Chief Executive Officer
Church Walk
DAVENTRY
Northants NN11 4BJ (0898)

LOUGHBOROUGH UNIVERSITY
OF TECHNOLOGY
Department of Physics
Hardware Engineer

Applications are invited for the post of Hardware Engineer (male/female) in the Elementary Particle Physics Group. The successful applicant will be required to design and commission electronic equipment including microprocessors.

A degree or equivalent in an appropriate subject with a substantial electronics content is required. Some experience in an electronics service and development environment is desirable.

The post is funded on Scale IB (£3,550-£5,370) by a rolling grant from SERC. The appointment will be for two years initially.

Applications should be made to the Senior Assistant Secretary, University of Loughborough, P.O. Box 360, Loughborough, Leics LE11 3TU, from whom application forms and further particulars are available, to reach him by Monday, 4 October, 1982. (0509)

LONDON BOROUGH OF SOUTHWARK
Systems Programmer

AP4 - £7,509 to £8,145 or
AP5 - £8,379 to £8,883 or
S01 - £9,198 to £9,741
(Salary review pending)

This vacancy is within a team of four support staff who provide software and operational support to all our mainframe users and are responsible for the support, testing and implementation of all new software products, base software updates and new hardware.

The Borough has recently upgraded from an ICL 2870 to an ICL 2988 and runs under VME/8.8.22 with two SPS 4 DME, and is becoming increasingly more involved in TP/IDMS applications.

Applicants should have a good working knowledge of VME/8.8.22 and COBOL. Experience with TP base systems would be an advantage.

Telephone 01-701 2870 any time for an application form, or write on a postcard to: The Personnel Officer, London Borough of Southwark, 25 Commercial Way, London SE16 6BG. Please quote reference CO/8/3307 and job title. Last date for receipt of completed application forms: 4.10.82.

Rotherham Metropolitan Council
ROTHER VALLEY COLLEGE OF
FURTHER EDUCATION
Doe Quarry Lane, Donington
Sheffield S31 7NH
required as soon as possible

TWO TEMPORARY
ONE-YEAR POSTS OF
LECTURER I
(£2355-£2627 p.a.)

One post for Computer Studies, one post for Computing/Electronics. This is an opportunity to work with a variety of courses from 'O' level to Higher T.E.C. Certificate in Computer Studies.

For further information ring Workshop 668881.

Curriculum Vitae and details of two persons for reference should be sent immediately to the Principal of the College. W. B. Mussett, Director of Personnel Resources (0892)

TECHNICIAN/
PROGRAMMER
FOR HUMAN-
COMPUTER
RESEARCH UNIT

Applicants should be able to demonstrate an ability to programme in at least one programming language.

The post is funded by the SERC and will be for three years initially.

Starting salary on the incremental scale Researcher A £4680 - £5355 per annum.

Further details and application form may be obtained from the Personnel Officer, Leicester Polytechnic, P.O. Box 143, Leicester LE1 9BH. Tel (0533) 551551 ext 2303. (1023)

CENTRAL REGIONAL COUNCIL
Computer DepartmentOPERATIONS
SUPPORT SUPERVISOR

Viewforth, Stirling
Salary: AP III, £6,898-£7,371
(National Salary Award Pending)

36 hours, 6-day week, Monday to Friday. Flexible working hours in accordance with the requirements of the Department.

The candidate will lead a small group of Operations Support Staff and therefore must have proven experience in all areas associated with such a group within a large IBM mainframe environment.

A sound knowledge of JCL, VSAM, IBM Utilities and Disk Space Management is essential. Knowledge of VM and MVS advantageous.

Applications in writing stating name, age, experience and qualifications to the Computer Manager, Central Regional Council, Viewforth, Stirling by Thursday, 7 October, 1982.

SOUTH DEVON
TECHNICAL COLLEGE
TORQUAY

Required immediately:

TEMPORARY
LECTURER I -
COMPUTING
SCIENCE/DATA
PROCESSING

To teach both theory and practice in awareness, appreciation and application courses, including Business Studies and A-level CICS.

This post is temporary for one year from the first instance.

APPLICANTS SHOULD BE TRAINED IN PREFERRED GRADUATES, INDUSTRIAL OR COMMERCIAL EXPERIENCE WILL BE AN ADVANTAGE.

Salary Scale (Barnham FE Report) Lecturer £5,256-£5,827 per annum

(Please send scale according to qualifications and experience.)

Further details and application form, together with a copy of the job description, may be obtained from: Mr. J. Baker, Administrative Officer, Newton Road, Torquay, TQ2 8VJ (0392 414141).

Box number replies should be addressed to: Box Number: 10 Computer Weekly, The Quadrant, Sutton, Surrey SM2 8AS

Welwyn Hatfield District Council

Senior Programmer
Salary up to £7,137
Pay award pending

Required to participate in the development of a property database using IDMS software, the successful applicant will ideally have 2-3 year COBOL experience, preferably with VME2900 and also have IDMS experience although training could be provided.

The person appointed will also play a major role in the further development of interactive word processing, cash receipting etc., providing both technical skills, consultancy and training.

Programmer
Salary up to £8,333
Pay award pending

Required to work on both the development of the property database and enhancements of our existing financial base. Applicants should therefore have 1-2 years COBOL experience preferably with VME2900 and/or IDMS.

Both posts carry a London outer fringe area allowance of £171 p.a. plus an incentive bonus paid half-yearly. Other benefits are: Housing accommodation or help with legal expenses in the case of house purchase, 100% removal expenses.

Further details from Computer Services Manager, Welwyn Hatfield District Council, Council Offices, Welwyn Garden City, Herts. Tel: Welwyn Garden 31212, ext 212. 0973

Chief Executives Department
Senior Programmer
£9,105-£10,443 incl. (under review)

The London Borough of Camden is a leading local authority in computing and is developing a wide range of applications for its ICL 2966/2966 complex, using the latest techniques and software tools including IDMS, DOS and TPMS.

If you have at least two years' applications programming experience in COBOL you could be the person we are looking for. Preferably you will also have worked in a 2900 VME installation, using structured programming techniques - but don't worry, training in these fields will be provided if necessary.

Interested? Application forms from the Departmental Staffing Officer, Room 207, Town Hall, Euston Road, London NW1 2BU or ring 287 9888 (Answerphone) quoting reference no. IC/88/CW. Closing date: 8th October, 1982. (1015)

CAMDEN
An equal opportunity employer

Applicants are considered on the basis of their suitability for the post, regardless of sex, race, marital status or disability.

UNIVERSITY OF LONDON
GOLDSMITHS' COLLEGE

Applications are invited for the following new posts in connection with the installation of a DEC VAX 11/750 computer to provide computing facilities throughout the College:

TWO APPLICATIONS/
ADVISORY PROGRAMMERS

Applicants should have experience of programming in BASIC, FORTRAN and PASCAL, and of solving users' problems. They will be expected to provide programming support to members of staff and to assist users to find appropriate solutions to their computing requirements.

Salary within the range £7,125 x 8 increments to £8,651 per annum inclusive.

Write for further details to the Personnel Officer, University of London Goldsmiths' College, New Cross, London, SE14 8NW. Closing date for applications 1st October, 1982. 0924

BOX
NUMBERS

Box number replies should be addressed to:

Box Number: 10 Computer Weekly, The Quadrant, Sutton, Surrey SM2 8AS

These are just a few of many permanent vacancies in the Goldsmiths' College, London.

For further details please phone or write to:

PRIMAX COMPUTER SERVICES
178 MITCHEAM ROAD, TOTTENHAM, LONDON, N.W.17
PHONE: 01-872 8848
Lic. No. 258897

DATABASE/TP DEVELOPMENTS

We have recently replaced our ICL 2960 and ICL 2972 computer installation with a 16 m b dual ICL 2988.

We are committed to the development of on-line database systems and have vacancies for the following staff to help us to achieve implementation targets within our development programme.

SENIOR ANALYST/
SYSTEMS ANALYST
(Ref. M20)

£6379-£11,589 p.a. (Under review)
Previous exposure to database and TP Systems is desirable, but training will be given if appropriate.

SENIOR PROGRAMMER/
PROGRAMMER
(Ref. M21)

£6072-£10,536 p.a. (Under review)
Experience of COBOL is essential. ICL 2900 experience is desirable but training will be given if appropriate.

A well-defined career structure will ensure that merit is rewarded by speedy progression within the organisation. Benefits include generous annual leave, flexible working hours, season ticket loans, a subsidised staff restaurant and relocation allowance if appropriate.

Application forms obtainable from the Personnel Officer, Directorate of Management Services, London Borough of Lambeth, 18 Brixton Hill, SW2. Tel: 01-274 7722 ext 3020. Closing date 7th October, 1982.

As part of Lambeth's Equal Opportunities Policy, applications are welcome from people regardless of disability, marital status, race or sex.

LAMBETH
(0897)

THE UNIVERSITY OF ASTON IN BIRMINGHAM
Microprocessor Unit

LECTURERS

Applications are invited for two lecturer posts in the University's Microprocessor Unit and associated with the Department of Electrical and Electronic Engineering.

The role of the Microprocessor Unit is to provide a University central resource for the design, development and support of microprocessors and related engineering and computational systems. It provides undergraduate and postgraduate courses, projects and research. The Unit maintains close links with industry, providing industrial short courses and undertaking consultancy.

The lecturers appointed will be expected to undertake general teaching duties in the Department of Electrical and Electronic Engineering in addition to participating in the work of the Microprocessor Unit. The posts should provide excellent opportunities for research.

Applicants should have research interests related to microprocessor applications and experience relevant to Electrical or Electronic Engineering. Candidates should preferably have a higher degree and/or industrial experience. Salary will be within the range £3775 to £13505 per annum and the appointments will be for a period of three years.

Application forms and further particulars may be obtained from the Staff Officer (quoting Ref. 589/129) University of Aston in Birmingham, Costa Green, Birmingham B4 7ET (Tel 021 359 3611 Ext 4564). Closing date: 16th October 1982. 1028

PRIMAX
COMPUTER
SERVICES

SYSTEMS ANALYST

A minimum of five years' experience in a commercial IBM environment is required for this position, and a good grounding in CICS is essential. London Ref. 100A

PROGRAM/ANALYST (1-2)

One-three years' solid IBM COBOL to work on commercial applications for a major company. Knowledge of CICS would be helpful. London Ref. 120B

ANALYST/PROG

With two-three years' solid IBM COBOL and CICS in a commercial environment. London Ref. 100B

PROGRAMMER

An interesting opening for a solid Burroughs programmer to work on and develop for the firm. Should have some exposure to systems and users as the job will entail analysis and user liaison. Knowledge of DMSII, CANDE, LINC would be useful. London Ref. 142A

ANALYST/PROGRAMMER

Two-three years' H/P3000 experience using COBOL. Must have good exposure to systems work. Home Counties/London Ref. 105A

ANALYST/PROGRAMMER

Around three years' experience in IBM COBOL, CICS and DLI will be necessary to fill these demanding positions in the banking sector. London Ref. 107B

TEAM LEADER

A thorough knowledge of CICS and DLI will be required as well as COBOL and BAL with applications and systems software experience and some involvement in the design and planning of IT systems. London Ref. 210A

ANALYST/PROGRAMMER

Minimum three years' exp. Burroughs with experience in systems design/implementation and database. Insurance and commercial applications. Also three programmes with two years' Burroughs COBOL. Good perks. London Ref. 129A

SYSTEMS ANALYST

Two-three years as an Analyst in a stock control environment on any mainframe is required. Must have Point-of-Sales systems experience; to work with Burroughs equipment on systems investigation and redevelopment. Avon Ref. 111B

ANALYST/PROGRAMMER

For five years' solid programming and systems, pref. using Data General equipment. Suit someone looking towards Project Management. Must have experience with multi-terminal minis and be prepared to do some programming. C. BUPA. London Ref. 102A

These are just a few of many permanent vacancies in the Goldsmiths' College, London.

For further details please phone or write to:

PRIMAX COMPUTER SERVICES
178 MITCHEAM ROAD, TOTTENHAM, LONDON, N.W.17
PHONE: 01-872 8848
Lic. No. 258897

Computer Weekly TOP JOBS

Announcing a new prestigious section for senior level computer appointments

Computer Weekly has introduced a new feature into the appointments section of the newspaper to accommodate senior level appointments with a basic minimum salary of £16k. The new section is headed "Top Jobs"

Computer Weekly carries a large volume of appointment pages every week. Now a special section for senior appointments will enable readers to locate suitable job opportunities more conveniently. At the same time, this new facility will provide advertisers with the option of securing a premier position without extra cost.

One of the special but important features of this new section is that only those jobs offering a basic minimum salary of £16k will be eligible for inclusion in "Top Jobs". This restriction will add considerable prestige to the section and the positions advertised.

Computer Weekly provides the most comprehensive news coverage of computer users and the computer industry. Surveys have shown the newspaper to be the most widely read computer publication in Britain. With a circulation of over *100,000 every week - 32% at senior/managerial level - Computer Weekly is your best choice for all computer vacancies, as well as those important Top Jobs.

Because of the strict salary level restrictions we are enforcing, and the subsequent advanced production arrangements necessary, all space reservations for the "Top Jobs" section must be received in London by 4 p.m. Friday before publication date.

To reserve space please phone Shobhan Gajjar (Direct Clients) or Julie McNally (Consultancies) on (01) 661 0121.

* Circulation ABC January-June 1982 - 100,263

Computer Weekly

Classified Department, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Sales Manager - for a Microcomputer Business Centre

Earnings package c. £20,000 + car : London

A blue chip national organisation with current UK revenue of over £300m. and a healthy record of profit growth, plans to open its first microcomputer centre for business customers in the London area early in 1983. The company has a sound understanding of the needs of this market place and plans to offer a full range of consultancy, education programmes and support services to its customers.

They seek a Manager to take line responsibility for the first centre, with the ability to develop a substantial UK operation from this initial base. Requirements are for a strong sales orientation coupled with an understanding of business application/data processing products and a keen business sense.

Earnings package negotiable around £20,000 plus car and usual large company benefits.

Please send full career details - in confidence - to A. R. Forrester ref. FY.1179.

This appointment is open to men and women.

MSL
Management Selection Limited
International Management Consultants
17 Stratton Street London W1X 6DB

Freelance with a Software House

We require Programmers and Analyst/Programmers to work in project development teams using

T.I. 990, DX10, COBOL

On-going requirements. Regardless of availability

Please Ring: Sheila Fox
Link Associates Limited
24a High Street, Chesham, Bucks. (0494) 784922



Management Services Manager

SE England

C. £15k

Our Client seeks a qualified and experienced specialist in O&M management services with extensive experience in developing computer based systems, preferably in the high-technology sector of the Defence Industry.

Reporting to the General Manager the successful appointee will be responsible for providing a comprehensive management service to a site with over 2,000 employees. He would head up a department of some 55 staff which provides a service of project management relating to the control of several multi-million pound high-technology projects and the provision of management information services. One of his major initial responsibilities would be the development and implementation of computer management information systems covering: Design Control, Project Management, Manufacturing Control, Contract Control and Accounting.

The client, a highly successful and profitable British company, is attractively situated in a semi-rural area within easy reach of central London. The position offers excellent rewards and conditions and, where appropriate, relocation assistance will be provided. To find out more and to apply in complete confidence, telephone Bernard Brown Hemel Hempstead (0442) 42418 during office hours or on Hemel Hempstead 2222 evenings or weekends (not an answering machine) or write to him at the address below.

Executive Recruitment Services

Collina House, 56 Wootton Drive
Hemel Hempstead, Herts. HP2 6LB
Tel: Hemel Hempstead (0442) 42418

TOP JOBS

This new section has been introduced to enable readers to locate senior level job opportunities more conveniently. One of the special but important features of this section is that only those jobs offering a basic minimum salary of £16k are eligible for inclusion in "Top Jobs". Because of the strict salary level restrictions we are enforcing, and the subsequent advanced production arrangements necessary, all space reservations for the "Top Jobs" section must be received in London by 4 p.m. Friday before publication date.

To reserve space please telephone Shobhan Gajjar (Direct Clients) or Julie McNally (Consultancies) on (01) 661 0121.

Computer Weekly

Classified Department, Quadrant House
The Quadrant, Sutton, Surrey, SM2 5AS

DATABASE PROGRAMMER UNIVAC

c £11,000+

Well-known company in London require a Data-Base Programmer to supplement their established team. A thorough knowledge and understanding of DMS 1100 and Cobol is required as the position carries the status of Senior Programmer. Although there are expansion plans within the area a degree of maintenance work is expected. A very professional outlook and attitude is required from interested applicants.

SYSTEMS PERSONNEL BRISTOL

to £10,000 + car

Retail chain based in Bristol have a requirement for two experienced Systems Personnel. The two people will have complementary skills and experience so as to cover the computer spectrum of retailing, stock control, equipment, etc. Experience of more than one manufacturers' hardware and of implementing a similar system, i.e., stock/sales control would also be required.

ANALYST/PROGRAMMERS BURROUGHS

c £10,000

Well-known company based in Essex require experienced programmers and analysts. The minimum requirement is two years' systems experience using COBOL, preferably on Burroughs hardware. Good academic qualifications, either a degree or HND are also a precondition for these posts. Successful candidates should also be prepared for travel within the U.K. and Europe.

ANALYST/PROGRAMMERS HP BASIC/SPL

to £11,000

Expanding specialist software house with offices in Central and West London seek computer professionals with experience of HP 3000 or 250 machines. Candidates with a good academic background are preferred and in return will receive an excellent salary and package which includes annual bonus, flexitime and company car scheme.

PROGRAMMERS HP COBOL

£ NEG.

Well-known City financial concern with an extensive commitment to computer development requires a programmer with 1-4 years' COBOL, which must include some HP 3000 experience. Initially all work will be of a development nature thereby ensuring good career prospects. Perks include subs mortgage, loans, etc.

ANALYST/PROGRAMMERS PRIME/MINI COBOL

c £10,000

Two expanding software houses using Prime machinery require Analyst/Programmers with approx. 3 years' COBOL gained on PRIME or similar equipment. One company is based in North London and the other S. London, both offer stimulating positions in dynamic environments.

PROGS & AN/PROGS HONEYWELL L66

£ NEG

Progressive installation based in N. Surrey/S. Middx. is seeking to further enhance its programming and system departments so creating the above mentioned position. Applicants should possess a sound knowledge of IDS data-base systems, together with 2-3 years' COBOL experience gained preferably within a commercial organisation. Perks are many and varied including the possibility of a company car after a short qualifying period.

PROGRAMMERS RPG11/RPG111

c £10,200

Two international banks based in the City have requirements for RPG programmers. Both are MIDAS users and would be interested in applicants with MIDAS experience but realistically any banking/financial knowledge with a solid RPG background would be acceptable. As well as banking benefits applicants can expect early exposure to System 38.

PROGRAMMER BASIC/RSTSE

c £8,000

A systems house specialising in DEC systems has a requirement for 2 BASIC+ programmers. Applicants should have around 18 months BASIC+ gained in any commercial environment. This is an ideal opportunity for programmers to move on to VAX systems as the client is installing several of these systems.

CSD PROGRAMMER/ANALYSTS RPG11/RPG111

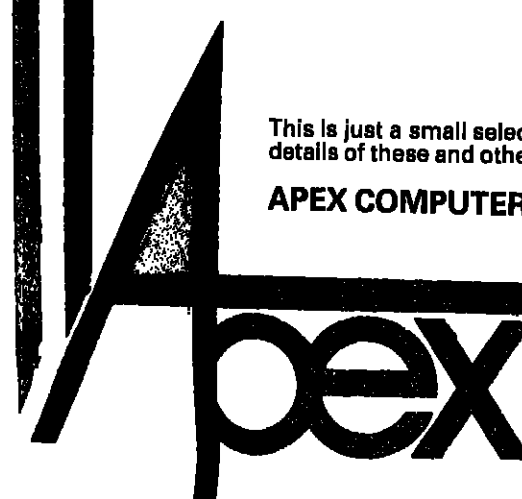
£ NEG.

We have many clients, all of whom are SYS34 or SYS38 users, who have current requirements for programmers and analysts. Applicants should have a minimum of 6 months RPG gained in a commercial environment through to 3 years+ for the more senior consultant positions. The companies range from banking to manufacturing and offer a wide range of benefits.

PROGS & AN/PROGS HONEYWELL L6

to £11,000

A manufacturing concern and bureau company situated in the West London area are currently seeking D.P. professionals with a minimum of 18 months' COBOL experience. Exposure to TCL and associated applications and packages would be a distinct advantage, however not essential as training will be given where necessary. Due to the progressive mode of development projects a sound understanding of analysis and design is required for the Analyst/Prog position. Perks are varied.



This is just a small selection of current requirements: for details of these and others not advertised call us now.

APEX COMPUTER RECRUITMENT LTD

LONDON
59 Gray's Inn Road
London WC1X 8TL
Tel. 01-404 4821, 24 hrs.

BRUSSELS
Rue Gatti de Gamond
1080 Brussels
Tel. 010 322 377 4913

SYSTEMS & PROGRAMMING

★ COBOL ANALYST PROGRAMMER

c £11,000

Expanding city concern urgently seeking an Analyst Programmer (potentially Project Leader) with around 4 years COBOL experience, gained on ANY HARDWARE. REF. VC.

★ D.G. SUPPORT ANALYST

to £10,000

New position for reliable, professional person. Sound DATA GENERAL COBOL programming essential, plus good knowledge of communications, hardware and software. REF. VC.

★ H.P. 3000 CITY

EV. GOOD

I have 3 positions for HP Analyst Programmers in a large multi-national organisation. Financial or commercial background. Excellent large company benefits. REF. SF.

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Broad D.P. experience required - preferably on two or more Mainframes - for Manufacturer requiring Systems Programmers. DATA-BASE/COMMS experience most advantageous. REF. MN

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★ ANALYST/PROGRAMMER (RPG-2 to RPG-3)

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Manufacturing company based in South London require upwards of 2 years RPG-2 on IBM System 34 to move into a Senior position - a Team Leader role with management prospects. A System 38 is due for delivery at the end of the year and retraining will be done in RPG-3. Any MAAPICS and/or any Systems design experience would be advantageous. A position with a challenge! REF. BH.

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to £15,000 + MORTGAGE

Financial Organisation based in the City require a Senior Analyst with an IBM 4300 (CICS/DL-1) and are heavily involved in communications networks. Experience of Banking packages would be desirable and the ability to liaise with non-technical and technical staff is essential. REF. BH.

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CITY

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SYS 34 RPGII

CITY

£10,000 + MORT.

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CITY

£13,000

Successful international shipping organisation seeks experienced systems analyst who will ideally have programming experience, sound financial background, along with knowledge of on-line systems and good communicative skills. Excellent benefits including cheap insurance and five weeks' holidays.

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Project Analyst Programming

Warner-Lambert (UK) Limited is a leading manufacturer of a wide range of pharmaceutical products.

Due to an internal promotion, a career opportunity has arisen for a Project Analyst - Programming to work with a small, flexible team at our Pontypool Operations Division.

The successful candidate will contribute directly to the development of computer systems in an analytical role, and will also provide a specialist programming resource to the Pontypool based Management Information Systems Group in terms of Application Programming and Software Package support.

Current hardware is a local IBM RJE Terminal handling batch work and an extensive Teleprocessing Network, all operating under DOS/VSE and linked to the Group Computing Centre's IBM 4341 in Hampshire.

The Group uses a wide range of

software and there are plans to make extensive use of 4th Generation Languages to support an ambitious development plan with particular emphasis on on-line systems.

Applicants must be able to demonstrate at least 3 years successful practical programming experience using COBOL on IBM mainframes, and should also be able to offer Systems Analysis experience in a manufacturing environment. A working knowledge of SHADOW/CICS and TOTAL would be an added advantage.

In return we are offering an excellent salary and benefits package, including relocation expenses where appropriate, to this attractive rural part of Gwent.

Please write or telephone for an application form to Andrew Roberts, Employee Resourcing and Development Manager, Warner-Lambert (UK) Limited, Usk Road, Pontypool, Gwent, NP4 0YH. Telephone 04955-2488 X 260.

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The division has over the last four years developed a significant European equipment portfolio of over \$200MM. Among other activities it develops equipment financing programs for major manufacturers predominantly in the D.P. business, an activity which requires considerable negotiation and judgemental skills.

The candidate should preferably be in his early 30s with a proven track record having a strong marketing bias. He should have a good broad technical knowledge across all D.P. product fields and be able to apply this to considerations of future developments/product life etc. and also be capable of expressing this in clear non-technical written form. The position should appeal to graduates in the computer industry who are proven executives and are looking for a much broader career in which they will be required to exercise their judgement and assume responsibility.

European language capabilities and some financial background would be an advantage but abilities to self start and perform are paramount. An attractive compensation package (inclusive of preferential rate mortgage) will be provided for the right candidate.

BOX NO. 1220

(0870)

UNITED KINGDOM ATOMIC ENERGY AUTHORITY Computer Programmers to £8500

We have vacancies for experienced Programmers to assist in the further development of on-line systems in our finance and accounts branch. For this work we use an IBM 30 33 with attached processor, which supports several hundred terminals using a variety of access methods.

We invite applications from candidates with a minimum qualification of two 'A' levels and good working experience of COBOL. Knowledge of ASSEMBLER, TASKMASTER, FILETAB, IDMS, VSAM, VSAPL and familiarity with VDU use would be advantageous. Starting pay will be up to £8523 depending on age and experience. Career prospects are good and we offer an attractive package of benefits, including an excellent contributory pension scheme.

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If you are looking for a challenge and a career move call now - Ref. CS 1285.

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SALES BIT

Quality of management - 23

Is complex paperwork necessary?

ONE of the questions used as part of the structured interviewing system by my company for the evaluation of salespeople, asks candidates to identify their greatest weaknesses or dislikes in the context of selling. It is hardly a shock revelation to state that in most cases the response is a declaration of hatred for unnecessary paperwork. Note the key word "unnecessary". It has so much semantic scope. One man's necessary is another's irrelevant.

By and large salespeople do not object to call-plans and call-reports - certainly if they have any real perception of professional selling and effective territory management. They appreciate the benefits to themselves as well as the company. What they do object to, usually by way of dedicated neglect, is paperwork which they believe to be either unnecessary, unused, or both.

Clearly the number of sales documents varies according to the nature of the job and the marketplace. A salesperson selling consumer goods within a retail environment would expect to be producing daily call-plans and call-reports in accordance with the high volume of calls (probably 12 or more per day) as well as a variety of other forms, such as individual orders, returns, complaints, competitive information, and so on. In a business products environment, which might involve as little as two calls per day, normal documentation may be limited to call-plans and call-reports.

Of course, the essential difference between these two extremes is highlighted by a common factor: the number of hours in a day. Whether selling bulletpens or battleships, effective salespeople feel an urgent need to utilise their selling time to the fullest, while, at the same time, satisfying the demand for essential information. Consequently, the person on two calls a day may have the demand and opportunity for producing detailed written reports, whereas someone with the high call rate and lumbered with a mass of sales documentation can be expected to do no more than tick

boxes - but more of that later.

So how do you know if you are inflicting too much or too little paperwork upon your sales team? As a general rule-of-thumb, if they keep bellyaching about it you have too much, if no-one ever mentions it you have too little, and if you get the occasional moan (usually from your "low-flyers") you're just about got it right.

There is, of course, a more scientific approach to evaluating sales documentation and I recommend it to you. Most sales planning and recording systems are like Topsy - they just grew and grew! No-one is quite sure how or why it first came into being, no-one can fully explain its current format, no-one really understands what the company does with the information and no-one knows what portion of it is essential as opposed to totally irrelevant.

What is needed in many cases is a complete reassessment of all current sales documentation utilising the objectivity and impartiality of an outsider. Then ask yourself these questions:

■ Does it help the salesperson to do a better job?

■ Is there any reason why this document should not be discarded? i.e. Is the success of the sales and marketing operation in any way dependent on it?

■ If the document cannot be discarded, what items within it can be eliminated? i.e. Those that are provided for interest rather than necessity.

■ Could any of these documents be amalgamated? i.e. let's reduce the volume of paper and duplication.

You will be surprised how much paperwork can be cut out altogether and how much more effectively essential information can be gathered in. This will not only lighten the paperwork load for the sales team and enhance their available selling time, but also reduce the sales manager's workload as well. As we say in Yorkshire, "Enough's plenty!"

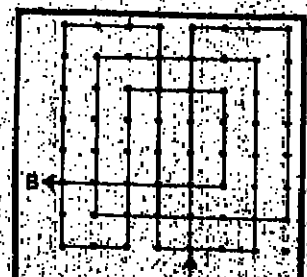
Alan Williams

COURSES

■ THE Chelmer-Essex Institute has planned a 10-week series of lectures on data communications, starting on October 4. The course presents an opportunity to become acquainted with the principles of data transmission and to hear the latest trends and developments in the data communications field. Topics include: local area networks; Prestel; data security and privacy and the software aspects of a network. Details from the Chelmer Institute of Higher Education, Victoria Road South, Chelmsford, Essex CM1 1LL. Tel: (0245) 354491.

■ A RESIDENTIAL course for senior managers called Managing in a Changing Technological Environment, is being held by Dux

PUZZLE ANSWER



Do this 1st